

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.95
Test oil : ISO 4113

Combination No. : 0403246041

Injection pump
Pump designation : PES6MW100/720RS1522
EP type number : 0413206023

Governor
Governor design. : RQV300...1300MW148
: -2
Governor no. : 0420083323

Cust. part No. : 0250748902

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

AD:

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 4.40
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : + 0.25
 Rated speed rpm : 1355
 guide sleeve
 travel mm : 9.33
 Tolerance mm : + 0.25
 Rated speed rpm : 1078
 guide sleeve
 travel mm : 7.06
 Tolerance mm : + 0.25
 Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : + 0.25
 Rated speed rpm : 564
 guide sleeve
 travel mm : 2.47
 Tolerance mm : + 0.25
 Rated speed rpm : 750
 guide sleeve
 travel mm : 4.02
 Tolerance mm : + 0.25
 Rated speed rpm : 1720

guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 133.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 120.0
 tolerance degree : + 4.0
 rack travel mm : 13.40
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1495
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.40
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 14.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 5.30
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 3.00
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.95
Test oil : ISO 4113
Combination No. : 0403276005
Injection pump
Pump designation : PES6MW100/720RS1517
: -3
EP type number : 0413206020
Governor
Governor design. : RSV350...1200MWOA355
Governor no. : 0420085228
Cust. part No. : 0250740102

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 100.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 350

Rack travel in mm : 3.00
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 100.0

A06

Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1315

rack travel mm : 10.15
Rated speed rpm : 1.5
Tolerance 1/min : + 5

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 3.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.15
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 11.15

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.15
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.20
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 10.90
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 10.50
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.95
Test oil : ISO 4113

Combination No. : 0403276006

Injection pump
Pump designation : PES6MW100/72ORS1517
: -3
EP type number : 0413206020

Governor
Governor design. : RSV350...1200MWOA355
: -1
Governor no. : 0420085229

Cust. part No. : 0250740202

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 120.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 103.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

2nd speed rpm : 350

Rack travel in mm : 3.10
Tolerance mm : +- 0.30

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 103.0

A09

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : +- 4.0

rack travel mm : 1.00
Tolerance mm : +- 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1320

rack travel mm : 10.40
Rated speed rpm : 1,5
Tolerance 1/min : +- 5

LOW IDLE

control lever
position degree : 68.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 3.10
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.45
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 11.45

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.45
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.85
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 530
rack travel mm : 11.00
Tolerance mm : ± 0.10

Pressure hPa : 350
rack travel mm : 10.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 64.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.95
Test oil : ISO 4113

Combination No. : 0403276007

Injection pump
Pump designation : PES6MW100/720RS1517
: -3
EP type number : 0413206020

Governor
Governor design. : RSV350...1200MWOA355
: -2
Governor no. : 0420085230

Cust. part No. : 0250740302

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 140.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

A11

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	118.0
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ 3.0
<hr/>		
Speed Tolerance cm ³ /1000 strokes	:	3.5
<hr/>		
Check tolerance cm ³ /1000S.	:	6.0
<hr/>		
Del. quantity cm ³ /1000 strokes	:	12.0
Tolerance cm ³ /1000 strokes	:	+ 2.0
Check tolerance cm ³ /1000S.	:	+ 4.5
Speed Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
<hr/>		
Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20
<hr/>		
governor spring pre-tension click setting x	:	4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1200
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	118.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 3.0

A12

Speed Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	6.0

RATED SPEED

control lever position degree	:	96.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	12.00
Rated speed rpm	:	1245
Tolerance 1/min	:	+ 5
<hr/>		
rack travel mm	:	1.00
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1400

LOW IDLE

control lever position degree	:	66.0
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	350
rack travel mm	:	3.30
Tolerance mm	:	+ 0.10
<hr/>		
rack travel mm	:	2.00
Rated speed rpm	:	100
CRT mm min.	:	> 19.00

TORQUE CONTROL

Rated speed rpm	:	1200
rack travel mm	:	13.00
Tolerance mm	:	+ 0.05
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Rated speed rpm	:	750
rack travel mm	:	13.00
Tolerance mm	:	+ 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.00
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.65
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 700

Pressure hPa : 350
rack travel mm : 10.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.95
Test oil : ISO 4113

Combination No. : 0403276008

Injection pump
Pump designation : PES6MW100/720RS1517
: -2
EP type number : 0413206019

Governor
Governor design. : RSV350...1300MWOA354
Governor no. : 0420085227

Cust. part No. : 0250740502

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 133.0
<hr/>	
Tolerance cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: + 4.0
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity cm ³ /1000 strokes	: 12.0
Tolerance cm ³ /1000 strokes	: + 2.0
Check tolerance cm ³ /1000S.	: + 4.5
Spreed Tolerance cm ³ /1000 strokes	: 2.0
Check tolerance cm ³ /1000S.	: 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
<hr/>	
governor spring pre-tension click setting x	: 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1300
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 133.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 4.0

A15

Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 8.0

RATED SPEED

control lever position degree	: 104.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 1.00
Tolerance mm	: + 0.70
Rated speed rpm	: 1600
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1465
<hr/>	
rack travel mm	: 13.40
Rated speed rpm	: 1345
Tolerance 1/min	: + 5

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm	: 350
rack travel mm	: 4.00

Testing:

rack travel mm	: 2.00
Rated speed rpm	: 430
Tolerance 1/min	: + 30
<hr/>	
Rated speed rpm	: 100
<hr/>	
CRT mm min.	: > 19.00

TORQUE CONTROL

Rated speed rpm	: 1300
rack travel mm	: 14.40
Tolerance mm	: + 0.05
<hr/>	
Rated speed rpm	: 750
rack travel mm	: 14.40
Tolerance mm	: + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 4.30
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 1.90
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0

Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.95
Test oil : ISO 4113

Combination No. : 0403276009

Injection pump
Pump designation : PES6MW100/720RS1517
: -2
EP type number : 0413206019

Governor
Governor design. : RSV350...1200MWOA357
Governor no. : 0420085233

Cust. part No. : 0250740402

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	118.0
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ 3.0
<hr/>		
Spreed Tolerance cm ³ /1000 strokes	:	4.5
<hr/>		
Check tolerance cm ³ /1000S.	:	7.0
<hr/>		
Del. quantity cm ³ /1000 strokes	:	12.0
Tolerance cm ³ /1000 strokes	:	+ 2.0
Check tolerance cm ³ /1000S.	:	+ 4.5
Spreed Tolerance cm ³ /1000 strokes	:	2.0
Check tolerance cm ³ /1000S.	:	4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
<hr/>		
Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20
<hr/>		
governor spring pre-tension click setting x	:	4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1200
Aneroid pressure hPa	:	1300
Del. quantity cm ³ /1000 strokes	:	118.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 3.0

Spreed Tolerance cm ³ /1000 strokes	:	4.5
Check tolerance cm ³ /1000S.	:	7.0

RATED SPEED

control lever position degree	:	108.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	1.00
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1450
<hr/>		
rack travel mm	:	4.00
Rated speed rpm	:	1375
<hr/>		
rack travel mm	:	12.30
Rated speed rpm	:	1245
Tolerance 1/min	:	+ 5

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm	:	350
rack travel mm	:	3.90

Testing:

rack travel mm	:	2.00
Rated speed rpm	:	430
<hr/>		
Rated speed rpm	:	100
CRT mm min.	:	> 19.00

TORQUE CONTROL

Rated speed rpm	:	1200
rack travel mm	:	13.30
Tolerance mm	:	+ 0.05
<hr/>		
Rated speed rpm	:	750
rack travel mm	:	13.30
Tolerance mm	:	+ 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 3.00
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 5.0

Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.95
Test oil : ISO 4113

Combination No. : 0403446177

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0413406138

Governor
Governor design. : RQV300...1300MW48
Governor no. : 0420083066

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

A20

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 7.90
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1280
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 113.0

A21

tolerance degree : ± 4.0
 rack travel mm : 10.00
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1440
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.90
 Tolerance mm : ± 1.10
 Rated speed rpm : 100
 CRT mm min. : > 8.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.05
 Tolerance mm : ± 0.05
 Rated speed rpm : 800
 rack travel mm : 11.90
 Tolerance mm : ± 0.10
 Rated speed rpm : 585
 rack travel mm : 12.10
 Tolerance mm : ± 0.10
 Rated speed rpm : 1100
 rack travel mm : 11.20
 Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 230
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.95
Test oil : ISO 4113

Combination No. : 0403446207

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0413406138

Governor
Governor design. : RQ300/1300MW96
Governor no. : 0420082032

Cust. part No. : 0160747802

Customer-spec. information

Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

A23

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 7.90
 Tolerance mm : +- 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1200
 Rack travel in mm : 13.50
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 100.0
 tolerance degree : +- 4.0
 rack travel mm : 10.00

A24

Rated speed rpm : 1345
 Tolerance 1/min : +- 5
 rack travel mm : 4.00
 Rated speed rpm : 1440
 Tolerance 1/min : +- 15
 rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.90
 Tolerance mm : +- 0.10
 rack travel mm : 2.00
 Rated speed rpm : 100
 CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.05
 Tolerance mm : +- 0.05
 Rated speed rpm : 800
 rack travel mm : 11.90
 Tolerance mm : +- 0.10
 Rated speed rpm : 585
 rack travel mm : 12.10
 Tolerance mm : +- 0.10
 Rated speed rpm : 1100
 rack travel mm : 11.20
 Tolerance mm : +- 0.10

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : < 180
 Check
 speed 1/min : < 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.95
Test oil : ISO 4113

Combination No. : 0403476085

Injection pump
Pump designation : PES6MW100/720RS1205
EP type number : 0413406195

Governor
Governor design. : RSV350...1300MWOA329
: -7
Governor no. : 0420085142

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 184.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Test hydr. locking device for starting with 500...1000 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± .05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 15.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 124.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 3.0

 Spread
 Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 350
 Rack travel in mm : 6.40
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 124.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 100.0
 tolerance degree : + 4.0
 rack travel mm : 14.50
 Rated speed rpm : 1335
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + 15
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1580

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 6.40
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
 rack travel mm : 15.55
 Tolerance mm : + 0.05
 Rated speed rpm : 800
 rack travel mm : 15.55
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.35
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 14.00
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 12.80
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 14.50
Rated speed rpm : 1335
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 0
rack travel mm : 6.40
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.95
Test oil : ISO 4113
Combination No. : 0403476138
Injection pump
Pump designation : PES6MW100/72ORS1130
 : -3
EP type number : 0413406235
Governor
Governor design. : RSV350...1300MWOA318
Governor no. : 0420085052
Cust. part No. : 0250748802

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.7⁸
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 11.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 350
 Rack travel in mm : 6.40
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 6.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 77.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 107.0
 tolerance degree : ± 4.0
 rack travel mm : 10.00
 Rated speed rpm : 1325
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1395
 Tolerance 1/min : ± 15
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1560

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 6.40
 Tolerance mm : ± 0.10
 rack travel mm : 2.00
 Rated speed rpm : 470
 Tolerance 1/min : ± 30
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
 rack travel mm : 11.10
 Tolerance mm : ± 0.10
 Rated speed rpm : 750
 rack travel mm : 11.60
 Tolerance mm : ± 0.05
 Rated speed rpm : 825
 rack travel mm : 11.40
 Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1325
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0400846559

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0410896082

Governor
Governor design. : RQV300...1400AB1065
: -9L
Governor no. : 0420212202

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 92.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 5.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
 cm³/1000 strokes : 3.0

Check tolerance
 cm³/1000S. : 7.0

2nd speed rpm : 300

Rack travel in mm : 8.80
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 12.0

Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0

Speed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 59.5

Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5

Speed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 111.0
 tolerance degree : + 4.0

rack travel mm : 9.30
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1555
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.80
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 655

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.35
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 11.40
 Tolerance mm : + 0.05

Rated speed rpm : 750
 rack travel mm : 11.10
 Tolerance mm : + 0.10

Rated speed rpm : 1100
 rack travel mm : 10.40
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 9.30
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

806

Rated speed rpm : 300
rack travel mm : 8.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113
Combination No. : 0400865027
Injection pump
Pump designation : PES5A80D410/3RS2526
EP type number : 0410885004
Governor
Governor design. : RSV325...900A1C602
: -5L
Governor no. : 0420232605
Cust. part No. : 0423 1362 KY0150-17

Customer-spec. information

Customer : KHD
Motor : F5L912
Power KW : 42.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

B07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 1.95
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 0.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 5- 4- 2
Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 11.40
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 53.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance cm ³ /1000S.	:	4.0
2nd speed rpm	:	325
Rack travel in mm	:	8.70
Del. quantity cm ³ /1000 strokes	:	12.0
Tolerance cm ³ /1000 strokes	: + -	1.5
Check tolerance cm ³ /1000S.	: + -	3.5
Spread Tolerance cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.50
Tolerance mm	: + -	0.20
governor spring pre-tension click setting x	:	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1130
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	53.5
Tolerance cm ³ /1000 strokes	: + -	0.5
Check tolerance cm ³ /1000S.	: + -	2.0
Spread Tolerance cm ³ /1000 strokes	:	2.5
Check tolerance cm ³ /1000S.	:	4.0

RATED SPEED

control lever position degree	:	97.0
tolerance degree	: + -	4.0
rack travel mm	:	10.40
Rated speed rpm	:	945
Tolerance 1/min	: + -	5
rack travel mm	:	4.00
Rated speed rpm	:	980
Tolerance 1/min	: + -	15
rack travel mm	:	0.85
Tolerance mm	: + -	0.55
Rated speed rpm	:	1150
rack travel mm	:	4.00
Rated speed rpm	:	1010

LOW IDLE

control lever position degree	:	73.0
tolerance degree	: + -	4.0

Setting point w/out bumper spring

Rated speed rpm	:	325
rack travel mm	:	8.20

Testing:

Rated speed rpm	:	325
rack travel mm	:	8.70
Tolerance mm	: + -	0.10

rack travel mm	:	2.00
Rated speed rpm	:	450
Tolerance 1/min	: + -	30

Rated speed rpm	:	100
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CRT mm min.	:	> 19.50
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TORQUE CONTROL

Rated speed rpm	:	900
rack travel mm	:	11.40
Tolerance mm	: + -	0.05

Rated speed rpm	:	500
rack travel mm	:	11.45
Tolerance mm	: + -	0.10

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 945
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.70
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0401846939

Injection pump
Pump designation : PE6P110A320RS3265
EP type number : 0411816778

Governor
Governor design. : RQV300...1050PA232
: -5
Governor no. : 0421813895

Cust. part No. : 11031123
: -P03 V. 3/94

Customer-spec. information

Customer : VME
Motor : TD102KCE
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1680750089

B10

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 158.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 158.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 50.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

rack travel mm : 11.45
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

control lever
position degree : 20.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 100
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 355

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 70
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : --
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.45
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0401846989

Injection pump
Pump designation : PE6P110A320RS3108X
EP type number : 0411816730

Governor
Governor design. : RQV250...1100PA920
 : -8
Governor no. : 0421814104

Cust. part No. : 425662
 : -P02 RELEASED

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : THD101,102,TD102
Power KW : 197.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.19
Tolerance mm : ± 0.25

Rated speed rpm : 1176
guide sleeve
travel mm : 8.29
Tolerance mm : ± 0.25

Rated speed rpm : 1090
guide sleeve
travel mm : 6.95
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : ± 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.71
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 119.0
tolerance degree : ± 4.0

rack travel mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 12.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.35
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : + 0.15

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 2.50
Tolerance mm : + 0.15

Pressure hPa : 250
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : + 0.15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
Test oil : ISO 4113

Combination No. : 0402046829

Injection pump
Pump designation : PES6P120A320RS3284
EP type number : 0412026749

Governor
Governor design. : RQV275...1050PA995
: -1
Governor no. : 0421813941

Cust. part No. : CCEP 5120A 66-177

Customer-spec. information
Customer : RVI
Motor : MIDR06.20.45 B/3
Power KW : 195.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

<hr/>	
Tolerance	
cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm	: -5.20
Tolerance mm	: + 0.20
Del. quantity	
cm ³ /1000 strokes	: 25.0
Tolerance	
cm ³ /1000 strokes	: + 2.0
Check tolerance	
cm ³ /1000S.	: + 5.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1220
<hr/>	
Rack travel in mm	: 10.50
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm ³ /1000 strokes	: 157.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	

Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 300.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: -1.00
Rated speed rpm	: 1125
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: -6.70
Rated speed rpm	: 1220
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: -10.20
Tolerance mm	: + 0.55
Rated speed rpm	: 1350

LOW IDLE

control lever	
position degree	: 247.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm	: 275
rack travel mm	: -5.20
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 200
CRT mm max.	: < -3.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 390
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TORQUE CONTROL

Rated speed rpm	: 1050
Tolerance mm	: + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.35
Tolerance mm : + 0.15

Rated speed rpm : 500

Pressure hPa : 130
rack travel mm : -1.00
Tolerance mm : + 0.10

Pressure hPa : 240
rack travel mm : -0.35
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check speed 1/min : > 80
Rated speed rpm : < 210
Check speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1125

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -5.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402640828

Injection pump
Pump designation : PE12P120A520LS7826
EP type number : 0412620817

Governor
Governor design. : RQV350...1050PA870
: -13
Governor no. : 0421813934

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 620.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

B19

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.05

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 275.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 6.0
<hr/>	
Check tolerance cm ³ /1000S.	: 10.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm	: 5.60
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 19.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1150
<hr/>	
Rack travel in mm	: 16.50
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 1800
Del. quantity cm ³ /1000 strokes	: 275.0
Tolerance cm ³ /1000 strokes	: ± 1.0

B20

Check tolerance cm ³ /1000S.	: ± 4.0
Spreed Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

RATED SPEED

control lever position degree	: 118.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 13.00
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1185
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1 0

LOW IDLE

control lever position degree	: 63.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 350
rack travel mm	: 5.60
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 250
<hr/>	
CRT mm min.	: > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 475
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TORQUE CONTROL

Rated speed rpm	: 1050
rack travel mm	: 14.05
Tolerance mm	: ± 0.05
<hr/>	
Rated speed rpm	: 750
rack travel mm	: 14.05

Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 1.45
Tolerance mm : + 0.05

Pressure hPa : 900
rack travel mm : 4.85
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 200
Check
speed 1/min : > 180
Rated speed rpm : < 310
Check
speed 1/min : < 330

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed

Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 340.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
Test oil : ISO 4113

Combination No. : 0402640844

Injection pump
Pump designation : PE12P120A520LS7879
EP type number : 0412620841

Governor
Governor design. : RQV350...1200PA1167
Governor no. : 0421814107

Cust. part No. : 0250742402

Customer-spec. information
Customer : MTU
Motor : 12V183-03
Power KW : 845.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 150
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

B22

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : .05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm	:	12.80
Tolerance mm	:	+ 0.10
<hr/>		
Del. quantity		
cm ³ /1000 strokes	:	310.0
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	+ 4.0
<hr/>		
Spreed		
Tolerance		
cm ³ /1000 strokes	:	8.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	12.0
<hr/>		
2nd speed rpm	:	350
<hr/>		
Rack travel in mm	:	4.00
Tolerance mm	:	+ 0.30
Del. quantity		
cm ³ /1000 strokes	:	20.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	10.0
Check tolerance		
cm ³ /1000S.	:	15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	350
guide sleeve		
travel mm	:	1.53
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	1281
guide sleeve		
travel mm	:	8.53
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	990
guide sleeve		
travel mm	:	5.68
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	420

guide sleeve		
travel mm	:	2.86
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	470
guide sleeve		
travel mm	:	3.42
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	620
guide sleeve		
travel mm	:	3.89
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1366
guide sleeve		
travel mm	:	10.00
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1470
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever		
position degree	:	- 1
Rated speed rpm	:	1310
<hr/>		
Rack travel in mm	:	12.00
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1200
Aneroid pressure		
hPa	:	2000
Del. quantity		
cm ³ /1000 strokes	:	310.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
Check tolerance		
cm ³ /1000S.	:	+ 4.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

RATED SPEED

control lever		
position degree	:	122.0
tolerance degree	:	+ 4.0

rack travel mm : 11.80
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.80
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 2000
rack travel mm : 12.70
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 5.90
Tolerance mm : + 0.15

Rated speed rpm : 600

Pressure hPa : 400
rack travel mm : 7.70
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : 6.80
Tolerance mm : + 0.10

Pressure hPa : 1600
rack travel mm : 12.00
Tolerance mm : + 0.05

Pressure hPa : 1200
rack travel mm : 10.45
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 240

Check
speed 1/min : > 220
Rated speed rpm : < 270

Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000s. : + 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1245
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0402646625

Injection pump
Pump designation : PE6P120A32ORS7300
EP type number : 0412626886

Governor
Governor design. : RQV275...1000PA1077K
Governor no. : 0421815358

Cust. part No. : 1280165

Customer-spec. information
Customer : DAF
Motor : WS 242 M
Power KW : 242.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.35
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 15.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 15.05
Tolerance mm : + 0.05

Del. quantity cm ³ /1000 strokes	: 228.0
<hr/>	
Tolerance cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: + 4.0
<hr/>	
Speed Tolerance cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm	: 6.20
Tolerance mm	: + 0.10
Del. quantity cm ³ /1000 strokes	: 17.0
Tolerance cm ³ /1000 strokes	: + 3.0
Check tolerance cm ³ /1000S.	: + 6.0
<hr/>	
Speed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve travel mm	: 2.14
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 1045
guide sleeve travel mm	: 9.83
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 689
guide sleeve travel mm	: 6.43
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 284
guide sleeve travel mm	: 2.27
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 334

guide sleeve travel mm	: 3.08
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 400
guide sleeve travel mm	: 3.92
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1310
guide sleeve travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1140
<hr/>	
Rack travel in mm	: 14.00
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 980
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 228.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 4.0
<hr/>	
Speed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED

control lever position degree	: 119.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 14.00
Rated speed rpm	: 1037
Tolerance 1/min	: + 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1165
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 395
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 8.50

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 15.05
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 14.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 14.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 15.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 480
rack travel mm : 14.35
Tolerance mm : \pm 0.05

Pressure hPa : 270
rack travel mm : 12.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 1037
Tolerance 1/min : \pm 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646655

Injection pump
Pump designation : PE6P120A320RS7361
EP type number : 0412626939

Governor
Governor design. : RQV275...1150PA1192K
Governor no. : 0421815452

Cust. part No. : 1304201/0

Customer-spec. information
Customer : DAF
Motor : RS/GS 245 M
Power KW : 245.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

C02

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

°NW after s.o.d. : 0.3

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm	:	14.50
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity		
cm ³ /1000 strokes	:	239.0
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	+ 4.0
<hr/>		
Speed		
Tolerance		
cm ³ /1000 strokes	:	5.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	275
<hr/>		
Rack travel in mm	:	5.70
Tolerance mm	:	+ 0.20
Del. quantity		
cm ³ /1000 strokes	:	13.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	275
guide sleeve		
travel mm	:	1.56
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	1223
guide sleeve		
travel mm	:	10.29
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	822
guide sleeve		
travel mm	:	6.85
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	300

guide sleeve		
travel mm	:	2.13
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	350
guide sleeve		
travel mm	:	2.97
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	460
guide sleeve		
travel mm	:	3.90
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1480
guide sleeve		
travel mm	:	13.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever		
position degree	:	- 1
Rated speed rpm	:	1275
<hr/>		
Rack travel in mm	:	13.50
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1130
Aneroid pressure		
hPa	:	1500
Del. quantity		
cm ³ /1000 strokes	:	239.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
Check tolerance		
cm ³ /1000S.	:	+ 4.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	5.0
Check tolerance		
cm ³ /1000S.	:	9.0

RATED SPEED

control lever		
position degree	:	120.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	13.50
Rated speed rpm	:	1207
Tolerance 1/min	:	+ 5

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : +- 15

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 71.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.70
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 14.50
Tolerance mm : +- 0.05

Rated speed rpm : 1025
rack travel mm : 14.50
Tolerance mm : +- 0.10

Rated speed rpm : 850
rack travel mm : 14.20
Tolerance mm : +- 0.10

Rated speed rpm : 650
rack travel mm : 13.20
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 12.85
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

CO4

Rated speed rpm : 1130
Pressure hPa : 1500
rack travel mm : 14.50
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1130
rack travel mm : 9.20
Tolerance mm : +- 0.20

Rated speed rpm : 1130

Pressure hPa : 740
rack travel mm : 13.05
Tolerance mm : +- 0.05

Pressure hPa : 320
rack travel mm : 10.00
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1207
Tolerance 1/min : +- 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646769

Injection pump
Pump designation : PE6P120A320LS7837
: -10
EP type number : 0412626855

Governor
Governor design. : RQV300...950PA1168
: -5
Governor no. : 0421814132

Cust. part No. : 0260740002

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

C06

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 13.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.26
Tolerance mm : + 0.20

Rated speed rpm : 1009
guide sleeve
travel mm : 8.28
Tolerance mm : + 0.15

Rated speed rpm : 575
guide sleeve
travel mm : 4.46
Tolerance mm : + 0.25

Rated speed rpm : 625

guide sleeve
travel mm : 5.03
Tolerance mm : + 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.16
Tolerance mm : + 0.25

Rated speed rpm : 1103
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1200
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1060

Rack travel in mm : 14.10
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : + 4.0

rack travel mm : 14.10
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 5.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.10
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 13.85
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : + 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 995
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646770

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0412626854

Governor
Governor design. : RQV300...1050PA1168
: -7
Governor no. : 0421814143

Cust. part No. : 0250749902

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 75
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

c10

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.25

Rated speed rpm : 1107
guide sleeve
travel mm : 8.52
Tolerance mm : + 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 25.13
Tolerance mm : + 0.25

Rated speed rpm : 558

guide sleeve
travel mm : 4.53
Tolerance mm : + 0.25

Rated speed rpm : 608
guide sleeve
travel mm : 5.03
Tolerance mm : + 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 6.13
Tolerance mm : + 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1145

Rack travel in mm : 12.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 5.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 550
rack travel mm : 13.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 800
rack travel mm : 13.00
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.55
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 200
rack travel mm : 11.40
Tolerance mm : + 0.15

Pressure hPa : 350
rack travel mm : 12.25
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 800
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646771

Injection pump
Pump designation : PE6P120A320LS7836-2
EP type number : 0412626944

Governor
Governor design. : RQV300...1050PA1168
: -8
Governor no. : 0421814141

Cust. part No. : 0250749802

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 95
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.80
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1107
guide sleeve
travel mm : 8.51
Tolerance mm : + 0.15

Rated speed rpm : 558
guide sleeve
travel mm : 4.53
Tolerance mm : + 0.25

Rated speed rpm : 608

guide sleeve
travel mm : 5.03
Tolerance mm : + 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 6.13
Tolerance mm : + 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 11.40
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : + 4.0

rack travel mm : 11.40
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 5.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.40
Tolerance mm : ± 0.05

Rated speed rpm : 550
rack travel mm : 12.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 700
rack travel mm : 12.40
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 11.05
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 200
rack travel mm : 11.45
Tolerance mm : ± 0.20

Pressure hPa : 300
rack travel mm : 12.00
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 200
Rated speed rpm : 30
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000s. : ± 4.5

Aneroid pressure
hPa : 700
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646970

Injection pump
Pump designation : PE6P120A32ORS7248
 : -10Y
EP type number : 0412626902

Governor
Governor design. : RQV275...1150PA986
Governor no. : 0421813920

Cust. part No. : 1248046/4

Customer-spec. information

Customer : DAF
Motor : RS 180 L
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 147.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.44
Tolerance mm : ± 0.15

Rated speed rpm : 1206
guide sleeve
travel mm : 8.25
Tolerance mm : ± 0.20

Rated speed rpm : 799
guide sleeve
travel mm : 5.21
Tolerance mm : ± 0.25

Rated speed rpm : 315
guide sleeve
travel mm : 1.98
Tolerance mm : ± 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.52
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.07
Tolerance mm : ± 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 9.70
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 9.75
Rated speed rpm : 1182
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 175
CRT mm min. : > 7.40

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 260

C20

rack travel mm : 10.35
Tolerance mm : + 0.05

Pressure hPa : 190
rack travel mm : 9.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 9.75
Rated speed rpm : 1 1/2
Tolerance 1/min : + 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance

cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646971

Injection pump
Pump designation : PE6P120A320RS7218
: -10Z
EP type number : 0412626892

Governor
Governor design. : RQV275...1000PA939
: -2
Governor no. : 0421813986

Cust. part No. : 1249337/5

Customer-spec. information
Customer : DAF
Motor : WS 242 L

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity
min. L/h : 105
Tolerance L/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : -3.5
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95
Tolerance mm : + 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	210.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm :	6.10
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	17.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.34
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1058
guide sleeve	
travel mm	: 8.05
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 676
guide sleeve	
travel mm	: 4.49
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 301
guide sleeve	
travel mm	: 1.78
Tolerance mm	: + 0.25

Rated speed rpm	: 351
guide sleeve	
travel mm	: 2.45
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 380
guide sleeve	
travel mm	: 2.66
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1310
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1130
<hr/>	
Rack travel in mm	: 13.90
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 850
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm ³ /1000 strokes	: 210.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 119.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 12.95
Rated speed rpm	: 1042
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1160
Tolerance 1/min	: + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 175
CRT mm min. : > 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.95
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 420

C23

rack travel mm : 13.35
Tolerance mm : + 0.05

Pressure hPa : 300
rack travel mm : 12.55
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1 1/2
Tolerance 1/min : + 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.10
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402646973

Injection pump
Pump designation : PE6P120A32ORS7218
 : -10Z
EP type number : 0412626892

Governor
Governor design. : RQ275/1000PA936-2
Governor no. : 0421801633

Cust. part No. : 1249172/5

Customer-spec. information
Customer : DAF
Motor : WS 242 L
Power KW : 242.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.64
Tolerance mm : \pm 0.10

Rated speed rpm : 1047
guide sleeve
travel mm : 6.43
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 356
guide sleeve
travel mm : 4.13
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 16.00
Tolerance mm : \pm 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 109.0
tolerance degree : \pm 4.0

rack travel mm : 12.95
Rated speed rpm : 1042
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : +- 20

Rated speed rpm : 175

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.95
Tolerance mm : +- 0.05

Rated speed rpm : 1000
rack travel mm : 13.95
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : +- 0.10

Rated speed rpm : 600

Pressure hPa : 420
rack travel mm : 13.35
Tolerance mm : +- 0.05

Pressure hPa : 300

C26

rack travel mm : 12.55
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 153.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1042
Tolerance 1/min : +- 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.10
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113
Combination No. : 0402646986
Injection pump
Pump designation : PE6P120A320RS7248
: -10Y
EP type number : 0412626902
Governor
Governor design. : RQ275/1150PA987
Governor no. : 0421801578
Cust. part No. : 1248043/4

Customer-spec. information
Customer : DAF
Motor : RS 180 L
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 5.25
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 14.50
Tolerance mm : + 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 10.75
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 147.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 550

Rack travel in mm : 15.80
Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : + 4.0

rack travel mm : 9.75
Rated speed rpm : 1207
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : + 20

Rated speed rpm : 175

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : ± 0.10

Rated speed rpm : 600

Pressure hPa : 260
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 190
rack travel mm : 9.90
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.75
Rated speed rpm : 1207
Tolerance 1/min : ± 8

LOW IDLE

Rated speed rpm : 275

D01

rack travel mm : 5.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113
Combination No. : 0402648799
Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885
Governor
Governor design. : RQ300/1050PA1030-28
Governor no. : 0421801778
Cust. part No. : 0260744102

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 5.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : \pm 0.05

 Del. quantity
 cm³/1000 strokes : 239.0

 Tolerance
 cm³/1000 strokes : \pm 1.0

 Check tolerance
 cm³/1000S. : \pm 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 300

 Rack travel in mm : 5.70
 Tolerance mm : \pm 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.94
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1104
 guide sleeve
 travel mm : 6.84
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.50
 Tolerance mm : \pm 0.10

 Rated speed rpm : 732
 guide sleeve
 travel mm : 6.13
 Tolerance mm : \pm 0.10

Rated speed rpm : 426
 guide sleeve
 travel mm : 4.29
 Tolerance mm : \pm 0.10

 Rated speed rpm : 540
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1270
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

 Rated speed rpm : 828
 guide sleeve
 travel mm : 6.38
 Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

 Rack travel in mm : 7.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 239.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 99.0
 tolerance degree : \pm 4.0

 rack travel mm : 13.30
 Rated speed rpm : 1098
 Tolerance 1/min : \pm 8

 rack travel mm : 4.00

Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 415
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.30
Tolerance mm : + 0.10

Rated speed rpm : 850
rack travel mm : 14.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400

rack travel mm : 11.35
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 12.55
Tolerance mm : + 0.20

Pressure hPa : 450
rack travel mm : 13.85
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : > 220
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 450
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
Test oil : ISO 4113

Combination No. : 0402648943

Injection pump
Pump designation : PE8P120A720LS7189
: -10

EP type number : 0412628893

Governor
Governor design. : RQV350...1050PA795
: -14
Governor no. : 0421814020

Cust. part No. : 1340518

Customer-spec. information
Customer : SCANIA
Motor : DSC14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

D06

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

D07

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 46.0

control lever
position degree : 106.0
tolerance degree : + 4.0

rack travel mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 2.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

control lever
position degree : 15.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.25

Tolerance mm : \pm 0.05
Rated speed rpm : 1050
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648947B

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQ300/950PA1032-5
Governor no. : 0421801668

Cust. part No. : 0230749602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 20.50
Tolerance mm : +- 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.72
Tolerance mm : ± 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.34
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 476

guide sleeve
travel mm : 4.76
Tolerance mm : ± 0.10

Rated speed rpm : 580
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : ± 4.0

rack travel mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 435
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 11.00
Tolerance mm : ± 0.10

Pressure hPa : 550

rack travel mm : 13.60
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 100
Check

speed 1/min : > 80

Rated speed rpm : > 220

Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000s. : ± 4.5

Aneroid pressure
hPa : 1000

Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 241.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000s. : ± 5.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648980

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0412628855

Governor
Governor design. : RQV300...950PA797
: -39
Governor no. : 0421814115

Cust. part No. : 0250749102

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

D13

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 289.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.29
 Tolerance mm : + 0.20

Rated speed rpm : 1010
 guide sleeve
 travel mm : 8.56
 Tolerance mm : + 0.15

Rated speed rpm : 567
 guide sleeve
 travel mm : 4.66
 Tolerance mm : + 0.25

Rated speed rpm : 617

guide sleeve
 travel mm : 5.23
 Tolerance mm : + 0.25

Rated speed rpm : 780
 guide sleeve
 travel mm : 6.31
 Tolerance mm : + 0.25

Rated speed rpm : 1092
 guide sleeve
 travel mm : 10.00
 Tolerance mm : + 0.25

Rated speed rpm : 1190
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1030

Rack travel in mm : 14.20
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 289.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 121.0
 tolerance degree : + 4.0

rack travel mm : 14.20
 Rated speed rpm : 995
 Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : +- 15

rack travel mm : 0.75
Tolerance mm : +- 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm min. : > 8.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : +- 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : +- 0.20

Pressure hPa : 500
rack travel mm : 11.65
Tolerance mm : +- 0.20

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 500
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 274.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648981

Injection pump
Pump designation : PE8P120A320LS7839
: -10

EP type number : 0412628855

Governor
Governor design. : RQ300/950PA971-10
Governor no. : 0421801754

Cust. part No. : 0250749002

Customer spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.25
Tolerance mm : + 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.33
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 4.72
Tolerance mm : + 0.10

Rated speed rpm : 580
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 102.0
tolerance degree : + 4.0

rack travel mm : 14.20
Rated speed rpm : 998
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : ± 0.20

Pressure hPa : 500

rack travel mm : 11.65
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 500
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 274.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 998
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648982

Injection pump
Pump designation : PE8P120A320LS7884
EP type number : 0412628900

Governor
Governor design. : RQV350...1200PA1197
Governor no. : 0421814116

Cust. part No. : 0250744102

Customer-spec. information
Customer : MTU
Motor : 8V-183-03
Power KW : 564.0

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde assembly : 1688901105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 0.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 9.50
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 260.5
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm	: 3.80
Tolerance mm	: ± 0.30
Del. quantity	
cm ³ /1000 strokes	: 15.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.53
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1255
guide sleeve	
travel mm	: 8.31
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 1000
guide sleeve	
travel mm	: 5.83
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 407
guide sleeve	
travel mm	: 2.57
Tolerance mm	: ± 0.25

Rated speed rpm	: 457
guide sleeve	
travel mm	: 3.13
Tolerance mm	: ± 0.25

Rated speed rpm	: 610
guide sleeve	
travel mm	: 3.65
Tolerance mm	: ± 0.25

Rated speed rpm	: 1360
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25

Rated speed rpm	: 1470
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1 70

Rack travel in mm	: 13.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 650
Del. quantity	
cm ³ /1000 strokes	: 260.5
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 12.70
Rated speed rpm	: 1245
Tolerance 1/min	: ± 5

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 3.80
Tolerance mm : + 0.10

Rated speed rpm : 250
CRT mm min. : > 5.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : + 0.05

Rated speed rpm : 1200
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.75
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 6.00
Tolerance mm : + 0.15

Pressure hPa : 500
rack travel mm : 9.00
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : 7.30
Tolerance mm : + 0.10

Pressure hPa : 1600
rack travel mm : 13.00
Tolerance mm : + 0.05

Pressure hPa : 1000
rack travel mm : 10.55
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 260
Check
speed 1/min : > 240
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 334.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 389.5
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1245
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 415.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.80
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113
Combination No. : 0402648983
Injection pump
Pump designation : PE8P120A320LS7839
 : -10
EP type number : 0412628855
Governor
Governor design. : RQ300/950PA993-9
Governor no. : 0421801755
Cust. part No. : 0250749202

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 14.50
Tolerance mm : ± 0.50
Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550
Rack travel in mm : 15.20

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.14
Tolerance mm : ± 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.34
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 399
guide sleeve
travel mm : 4.46
Tolerance mm : ± 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1170
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : ± 4.0

rack travel mm : 14.20
Rated speed rpm : 998
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : ± 0.20

Pressure hPa : 500

rack travel mm : 11.65
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check

speed 1/min : > 80

Rated speed rpm : < 220

Check

speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 500

Rated speed rpm : 400

Del. quantity

cm³/1000 strokes : 196.0

Tolerance

cm³/1000 strokes : ± 1.5

Check tolerance

cm³/1000S. : ± 4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 750

Del. quantity

cm³/1000 strokes : 274.5

Tolerance

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000S. : ± 6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity

cm³/1000 strokes : 271.0

Tolerance

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000S. : ± 6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm³/1000 strokes : 136.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 998
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648984

Injection pump
Pump designation : PE8P120A320LS7839
 : -10
EP type number : 0412628855

Governor
Governor design. : RQ300/1050PA972-12
Governor no. : 0421801759

Cust. part No. : 0250749302

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

E01

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 289.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.94
Tolerance mm : + 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.34
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 4.51
Tolerance mm : + 0.10

Rated speed rpm : 570
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : + 4.0

rack travel mm : 14.20
Rated speed rpm : 1098
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 15.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : ± 0.20

Pressure hPa : 500

rack travel mm : 11.65
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 190
Check

speed 1/min : > 170

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 500

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure

hPa : 1200

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 274.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 1098
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648985

Injection pump
Pump designation : PE8P120A320LS7839
 : -10
EP type number : 0412628855

Governor
Governor design. : RQ300/1050PA993-10
Governor no. : 0421801760

Cust. part No. : 0250749502

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Lube oil : 1409918004

E05

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.05
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 14.50
Tolerance mm : +- 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.85
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.34
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 271
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 14.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.50

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 15.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : + 0.20

Pressure hPa : 500

E07

rack travel mm : 11.65
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 500
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 274.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648987

Injection pump
Pump designation : PE8P120A320LS7838
: -10
EP type number : 0412628854

Governor
Governor design. : RQV300...950PA1199
: -2
Governor no. : 0421814144

Cust. part No. : 0250746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

E09

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1012
guide sleeve
travel mm : 8.60
Tolerance mm : + 0.15

Rated speed rpm : 567
guide sleeve
travel mm : 4.66
Tolerance mm : + 0.25

Rated speed rpm : 617

guide sleeve
travel mm : 5.23
Tolerance mm : + 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : + 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1045

Rack travel in mm : 14.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 254.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : + 4.0

rack travel mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : ± 0.15

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 70
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000s. : ± 4.5

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648992

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885

Governor
Governor design. : RQV300...1050PA1033
: -21
Governor no. : 0421814145

Cust. part No. : 0250747502

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 170
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm	:	14.80
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity cm ³ /1000 strokes	:	239.0
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ 4.0
<hr/>		
Spread Tolerance cm ³ /1000 strokes	:	6.0
<hr/>		
Check tolerance cm ³ /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.70
Tolerance mm	:	+ 0.30
Del. quantity cm ³ /1000 strokes	:	13.0
Tolerance cm ³ /1000 strokes	:	+ 3.0
Check tolerance cm ³ /1000S.	:	+ 6.0
<hr/>		
Spread Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	1.29
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	1110
guide sleeve travel mm	:	8.58
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	558
guide sleeve travel mm	:	4.53
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	608

guide sleeve travel mm	:	5.03
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	820
guide sleeve travel mm	:	6.13
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1183
guide sleeve travel mm	:	10.00
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1280
guide sleeve travel mm	:	11.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever position degree	:	- 1
Rated speed rpm	:	1140
<hr/>		
Rack travel in mm	:	13.30
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	550
Aneroid pressure hPa	:	1200
Del. quantity cm ³ /1000 strokes	:	239.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0
<hr/>		
Spread Tolerance cm ³ /1000 strokes	:	6.0
Check tolerance cm ³ /1000S.	:	9.0

RATED SPEED

control lever position degree	:	121.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	13.30
Rated speed rpm	:	1095
Tolerance 1/min	:	+ 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.30
Tolerance mm : + 0.10

Rated speed rpm : 850
rack travel mm : 14.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 11.35
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 12.55
Tolerance mm : + 0.20

Pressure hPa : 450
rack travel mm : 13.85
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 450
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648993

Injection pump
Pump designation : PE8P120A320LS7838
: -10

EP type number : 0412628854

Governor
Governor design. : RQ300/950PA971-11
Governor no. : 0421801764

Cust. part No. : 0260740202

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 254.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : +- 0.30

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.72
Tolerance mm : +- 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.34
Tolerance mm : +- 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 451

guide sleeve
travel mm : 4.76
Tolerance mm : +- 0.10

Rated speed rpm : 580
guide sleeve
travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 254.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : +- 4.0

rack travel mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : +- 15

rack travel mm : 0.75
Tolerance mm : +- 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : + 30

Rated speed rpm : 200

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : + 0.15

Pressure hPa : 550

rack travel mm : 13.85
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : > 220
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : +- 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648994

Injection pump
Pump designation : PE8P120A32OLS7838
 : -10
EP type number : 0412628854

Governor
Governor design. : RQV300...950PA797
 : -41
Governor no. : 0421814126

Cust. part No. : 0260740302

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

E21

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 254.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1012
guide sleeve
travel mm : 8.60
Tolerance mm : + 0.15

Rated speed rpm : 567
guide sleeve
travel mm : 4.66
Tolerance mm : + 0.25

Rated speed rpm : 617

guide sleeve
travel mm : 5.23
Tolerance mm : + 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : + 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1035

Rack travel in mm : 14.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 254.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : + 4.0

rack travel mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : + 0.15

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 70
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648995

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885

Governor
Governor design. : RQV300...950PA1168
: -4
Governor no. : 0421814130

Cust. part No. : 0250749602

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

E25

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.49
Tolerance mm : \pm 0.25

Rated speed rpm : 1012
guide sleeve
travel mm : 8.56
Tolerance mm : \pm 0.25

Rated speed rpm : 589
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 639
guide sleeve
travel mm : 5.51
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1035

Rack travel in mm : 13.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 239.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 5.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 860
rack travel mm : 14.35
Tolerance mm : ± 0.10

Rated speed rpm : 820
rack travel mm : 14.65
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : ± 0.05

MEASUREMENT

E27

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.60
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 450
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : +- 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.30
Tolerance mm : +- 0.25
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0402648996

Injection pump
Pump designation : PE8P120A320LS7839
: -10

EP type number : 0412628855

Governor
Governor design. : RQV300...950PA1199
: -1
Governor no. : 0421814131

Cust. part No. : 0250749702

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 75
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

F01

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1009
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.15

Rated speed rpm : 567
guide sleeve
travel mm : 4.66
Tolerance mm : + 0.25

Rated speed rpm : 617

F02

guide sleeve
travel mm : 5.23
Tolerance mm : + 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : + 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1030

Rack travel in mm : 14.20
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : + 4.0

rack travel mm : 14.20
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 320

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.25
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.95
Tolerance mm : + 0.20

Pressure hPa : 500
rack travel mm : 11.65
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 500
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 274.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.95
Test oil : ISO 4113

Combination No. : 0402648997

Injection pump
Pump designation : PE8P120A320LS7838
: -10

EP type number : 0412628854

Governor
Governor design. : RQ300/950PA993-12
Governor no. : 0421801776

Cust. part No. : 0260740402

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 1.0

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

F05

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.30

Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.14
Tolerance mm : ± 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.35
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 414

guide sleeve
travel mm : 4.91
Tolerance mm : ± 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1170
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : ± 4.0

rack travel mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : ± 20

Rated speed rpm : 200
CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : ± 0.20

Pressure hPa : 550

rack travel mm : 13.85
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.95
Test oil : ISO 4113
Combination No. : 0402666802
Injection pump
Pump designation : PE6P120A320/3LS7883
EP type number : 0412626938

Governor
Governor design. : RSV600...1050POA591
Governor no. : 0421833457

Cust. part No. : 0250746802

Customer-spec. information
Customer : MB-NFZ
Motor : OM 401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
 cm³/1000 strokes : ± 1.0

 Check tolerance
 cm³/1000S. : ± 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0
 2nd speed rpm : 600
 Rack travel in mm : 3.80
 Tolerance mm : ± 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : ± 0.20
 governor spring
 pre-tension
 click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 202.0
 Tolerance
 cm³/1000 strokes : ± 1.0

F10

Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 88.0
 tolerance degree : ± 4.0

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 700
 rack travel mm : 3.80
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 630
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
 rack travel mm : 12.40
 Tolerance mm : ± 0.05

Rated speed rpm : 700
 rack travel mm : 12.40
 Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 201.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 600
rack travel mm : 3.80
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736859
Injection pump
Pump designation : PES6P120A12ORS7261
EP type number : 0412726876
Governor
Governor design. : RQV350...1100PA924
 : -10K
Governor no. : 0421815429
Cust. part No. : 3282465

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 176.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 17.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 7.0
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 145.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance cm ³ /1000S.	: 9.0
2nd speed rpm	: 350
Rack travel in mm	: 5.10
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 26.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1400

Rack travel in mm	: 9.00
Tolerance mm	: ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure hPa	: 900
Del. quantity cm ³ /1000 strokes	: 145.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0

Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED

control lever position degree	: 113.0
tolerance degree	: ± 4.0

rack travel mm	: 9.80
Rated speed rpm	: 1145
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: ± 15

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever position degree	: 68.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 350
rack travel mm	: 5.10
Tolerance mm	: ± 0.10

Rated speed rpm	: 250
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CRT mm min.	: > 6.60
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CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 400
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TORQUE CONTROL

Rated speed rpm	: 1100
rack travel mm	: 10.85
Tolerance mm	: ± 0.05

Rated speed rpm	: 700
rack travel mm	: 10.00
Tolerance mm	: ± 0.10

Rated speed rpm : 900
rack travel mm : 10.35
Tolerance mm : +- 0.15

Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : +- 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 900
rack travel mm : 10.85
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.70
Tolerance mm : +- 0.10

Rated speed rpm : 1100

Pressure hPa : 320
rack travel mm : 8.50
Tolerance mm : +- 0.20

Pressure hPa : 560
rack travel mm : 10.25
Tolerance mm : +- 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1145
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0402746953

Injection pump
Pump designation : PES6P120A32ORS7294
EP type number : 0412726895

Governor
Governor design. : RQV275...1000PA1001
: -1
Governor no. : 0421813936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 J/3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

F15

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -8.60
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.29
Tolerance mm : \pm 0.10

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.10

Rated speed rpm : 773
guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : \pm 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 12.60
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 302.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : -9.70
Rated speed rpm : 1210
Tolerance 1/min : \pm 15

rack travel mm : -13.25
Tolerance mm : + 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 246.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.60
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : -5.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -5.00
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240

rack travel mm : -3.80
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : -0.95
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 225
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00

Rated speed rpm : 1070
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -8.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
Test oil : ISO 4113
Combination No. : 0402746993
Injection pump
Pump designation : PES6P120A720LS7341
EP type number : 0412726913
Governor
Governor design. : RQV350...1150PA1159
Governor no. : 0421814099

Cust. part No. : 0250742302

Customer-spec. information

Customer : MTU
Motor : 6-R-183
Power kW : 440.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 90
Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

F19

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 273.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 6.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm	: 4.10
Tolerance mm	: ± 0.30
Del. quantity	
cm ³ /1000 strokes	: 17.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.53
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 1206
guide sleeve	
travel mm	: 8.35
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 950
guide sleeve	
travel mm	: 5.78
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 416
guide sleeve	
travel mm	: 2.77
Tolerance mm	: ± 0.25

Rated speed rpm	: 466
guide sleeve	
travel mm	: 3.35
Tolerance mm	: ± 0.25

Rated speed rpm	: 600
guide sleeve	
travel mm	: 3.83
Tolerance mm	: ± 0.25

Rated speed rpm	: 1308
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25

Rated speed rpm	: 1410
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1410

Rack travel in mm	: 13.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 800
Del. quantity	
cm ³ /1000 strokes	: 273.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 13.50
Rated speed rpm	: 1195
Tolerance 1/min	: ± 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : + 0.10

Rated speed rpm : 250
CRT mm min. : > 5.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 10.20
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 14.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.20
Tolerance mm : + 0.20

Pressure hPa : 200
rack travel mm : 7.10
Tolerance mm : + 0.05

Pressure hPa : 400
rack travel mm : 9.10
Tolerance mm : + 0.10

Pressure hPa : 1300
rack travel mm : 11.70
Tolerance mm : + 0.05

Pressure hPa : 1700
rack travel mm : 13.80
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 220
Check
speed 1/min : > 200
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 344.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1195

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 420.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
 Test oil : ISO 4113
 Combination No. : 0403244045
 Injection pump
 Pump designation : PES4MW100/72ORS1524
 EP type number : 0413204021
 Governor
 Governor design. : RQV300...1300MW132
 : -12
 Governor no. : 0420083329
 Cust. part No. : 0240740902

Customer-spec. information
 Customer : MB-NFZ
 Motor : OM364LA
 Power kW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1419992198
 Inlet press. bar : 1.5
 Test nozzle holde
 assembly : 1688901101
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1680750089
 Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : ± 1.0
 Prestroke mm : 4.55
 Tolerance mm : ± 0.05
 test only : ± 0.10
 Rack travel in mm : 11.00
 Firing order : 1-3-4-2
 Phasing : 0-90-180-270
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
 Rack travel in mm : 11.00
 Tolerance mm : ± 0.05
 Del. quantity
 cm³/1000 strokes : 86.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 2nd speed rpm : 300
 Rack travel in mm : 4.40
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.14
 Tolerance mm : + 0.25

Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : + 0.25

Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25

Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : + 0.25

Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : + 0.25

Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 111
 Rated speed rpm : 1350

Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 86.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 110.0
 tolerance degree : + 4.0

rack travel mm : 10.00
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.00
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 71.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.95
 Test oil : ISO 4113
 Combination No. : 0403246047
 Injection pump
 Pump designation : PES6MW100/72ORS1522
 EP type number : 0413206023
 Governor
 Governor design. : RQV300...1300MW148
 : -4
 Governor no. : 0420083325
 Cust. part No. : 0250744802

Customer-spec. information
 Customer : MB-NFZ
 Motor : OM366LA
 Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
 temp. °C : 40
 Tolerance °C : + 2.0
 Overflow valve : 1419992198
 Inlet press. bar : 1.5
 Test nozzle holde
 assembly : 1688901101
 Opening pressure
 bar : 208.5
 Tolerance bar : + 1.5
 Test lines : 1680750089
 Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : + 1.0
 Prestroke mm : 4.55
 Tolerance mm : + 0.05
 test only : + 0.10
 Rack travel in mm : 1.00
 Firing order : 1- 5- 3- 6- 2-
 : 4
 Phasing : 0-60-120-180-240
 : -300
 Tolerance : + 0.50
 Check
 tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
 Rack travel in mm : 13.30
 Tolerance mm : + 0.05
 Del. quantity
 cm³/1000 strokes : 118.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : + 0.25

Rated speed rpm : 1355
guide sleeve
travel mm : 9.32
Tolerance mm : + 0.25

Rated speed rpm : 1078
guide sleeve
travel mm : 7.06
Tolerance mm : + 0.25

Rated speed rpm : 514
guide sleeve
travel mm : 2.14
Tolerance mm : + 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 2.60
Tolerance mm : + 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 3.93
Tolerance mm : + 0.25

Rated speed rpm : 1720

guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 4.40
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.95
Test oil : ISO 4113

Combination No. : 0403444112

Injection pump
Pump designation : PES4MW100/72ORS1127
EP type number : 0413404103

Governor
Governor design. : RGV300...1300MW48-2
Governor no. : 0420083110

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

G03

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 7.85
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1330

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 81.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 120.0
 tolerance degree : + 4.0

604

rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 86.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.85
 Tolerance mm : + 0.05

Rated speed rpm : 100

CRT mm min. : > 9.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 465

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.15
 Tolerance mm : + 0.05

Rated speed rpm : 750
 rack travel mm : 11.95
 Tolerance mm : + 0.10

Rated speed rpm : 585
 rack travel mm : 12.20
 Tolerance mm : + 0.10

Rated speed rpm : 1000
 rack travel mm : 11.20
 Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 230
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 300

G05

rack travel mm : 7.85
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0403474022

Injection pump
Pump designation : PES4MW100/72ORS1151
EP type number : 0413404104

Governor
Governor design. : RSV350...1300MWOA329
: -12
Governor no. : 0420085189

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364A
Power kW : 79.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

G06

x inside diameter : 3.0
x length mm : 600

REMARKS

Test hydr. locking device for starting with 500...1000 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
2nd speed rpm :	350
Rack travel in mm :	> 6.40
Tolerance mm :	+ 0.40
Del. quantity	
cm ³ /1000 strokes :	12.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
governor spring	
pre-tension	
click setting x :	6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1280
Aneroid pressure	
hPa :	700
Del. quantity	
cm ³ /1000 strokes :	81.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5

Check tolerance	
cm ³ /1000S. :	6.0

RATED SPEED

control lever	
position degree :	99.0
tolerance degree :	+ 4.0
rack travel mm :	1.00
Tolerance mm :	+ 0.70
Rated speed rpm :	1550

LOW IDLE

Testing:

Rated speed rpm :	350
rack travel mm :	6.40
Tolerance mm :	+ 0.40
rack travel mm :	2.00
Rated speed rpm :	1000
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1280
rack travel mm :	10.95
Tolerance mm :	+ 0.05
Rated speed rpm :	600
rack travel mm :	11.85
Tolerance mm :	+ 0.10
Rated speed rpm :	1000
rack travel mm :	11.80
Tolerance mm :	+ 0.10

Rated speed rpm :	1175
rack travel mm :	11.15
Tolerance mm :	+ 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm :	500
Pressure hPa :	700
rack travel mm :	11.85
Tolerance mm :	+ 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.30
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 10.80
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : $>$ 6.40
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113
Combination No. : 0400866159
Injection pump
Pump designation : PES6A85D410/3RS2761
EP type number : 0410886895
Governor
Governor design. : RSV325...1400A2C2245
: L
Governor no. : 0420232537
Cust. part No. :

Customer spec. information

Customer : KHD
Motor : BF6L913T
Power KW : 85.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750014
Outside diameter : 6.0

G09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 1.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 10.45
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Speed

Tolerance
 cm3/1000 strokes : 3.0

Check tolerance
 cm3/1000S. : 7.0

2nd speed rpm : 325

Rack travel in mm : 8.00
 Tolerance mm : + 0.10

Del. quantity
 cm3/1000 strokes : 16.0

Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 5.0

Speed
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 3.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : -

Del. quantity
 cm3/1000 strokes : 70.0

Tolerance
 cm3/1000 strokes : + 0.5
 Check tolerance
 cm3/1000S. : + 2.5

Speed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 7.0

RATED SPEED

control lever
 position degree : 99.0
 tolerance degree : + 4.0

rack travel mm : 9.45
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1280
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1445

rack travel mm : 4.00
 Rated speed rpm : 1315

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.50

Testing:

Rated speed rpm : 325
 rack travel mm : 8.00
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 490
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 10.45
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 11.00

Tolerance mm : + 0.05
Rated speed rpm : 800
rack travel mm : 11.00
Tolerance mm : + 0.10

Rated speed rpm : 975
rack travel mm : 10.80
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 3.5

BREAKAWAY

Rack travel in mm : 9.45
Rated speed rpm : 1245
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : + 7.5
Check tolerance
cm³/1000S. : + 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.95
Test oil : ISO 4113
Combination No. : 0401848828
Injection pump
Pump designation : PE8P120A520/4LS3850
EP type number : 0411828723
Governor
Governor design. : RQ300/900PA1230
Governor no. : 0421801792

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2848LE

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089
Outside diameter : 8.0

G12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

2nd speed rpm : 300

Rack travel in mm : 6.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.44
Tolerance mm : + 0.10

Rated speed rpm : 932
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 880
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 433
guide sleeve
travel mm : 4.94
Tolerance mm : + 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600
Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 31.0
tolerance degree : + 4.0

control lever
position degree : 93.0
tolerance degree : + 4.0

rack travel mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 965
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 9.80

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.95
Test oil : ISO 4113
Combination No. : 0401849757
Injection pump
Pump designation : PE10P120A520/4LS3863
EP type number : 0411897711
Governor
Governor design. : RQ300/900PA1230
Governor no. : 0421801792

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2840LE

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089
Outside diameter : 8.0

G15

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 10- 9- 4- 1- 8
 : - 7- 6- 3- 5
 : - 2

Phasing : 0-45-72-117-144
 : -189-216-261-288
 : -333
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 208.0
<hr/>	
Tolerance cm ³ /1000 strokes	: +- 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: +- 4.0
<hr/>	
Speed Tolerance cm ³ /1000 strokes	: 6.0
<hr/>	
Check tolerance cm ³ /1000S.	: 10.0
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 6.80
Tolerance mm	: +- 0.30
Del. quantity cm ³ /1000 strokes	: 24.0
Tolerance cm ³ /1000 strokes	: +- 3.0
Check tolerance cm ³ /1000S.	: +- 6.0
Speed Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.44
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 932
guide sleeve travel mm	: 6.37
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 880
guide sleeve travel mm	: 6.00
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 433
guide sleeve travel mm	: 4.94
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 510

guide sleeve travel mm	: 6.00
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 1050
guide sleeve travel mm	: 11.50
Tolerance mm	: +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 850
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 208.0
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 4.0
Speed Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

RATED SPEED

control lever position degree	: 31.0
tolerance degree	: +- 4.0
<hr/>	
control lever position degree	: 93.0
tolerance degree	: +- 4.0
<hr/>	
rack travel mm	: 10.90
Rated speed rpm	: 925
Tolerance 1/min	: +- 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 965
Tolerance 1/min	: +- 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 1100

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 9.80

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 500
rack travel mm : 6.80
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0402646603

Injection pump
Pump designation : PE6P120A720RS7022
EP type number : 0412626873

Governor
Governor design. : RQV200...1000PA539
: -15
Governor no. : 0421814013

Cust. part No. : 1340658

Customer-spec. information
Customer : SCANIA
Motor : DS11 75

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : +- 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1050

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

G19

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 64.0
tolerance degree : +- 4.0

control lever
position degree : 116.0
tolerance degree : +- 4.0

rack travel mm : 11.10
Rated speed rpm : 1045
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : +- 15

rack travel mm : 2.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : +- 4.0

control lever
position degree : 23.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : +- 30

Rated speed rpm : 150
CRT mm min. : > 6.20

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.15
Tolerance mm : +- 0.05

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 390
rack travel mm : 10.60
Tolerance mm : +- 0.15

Pressure hPa : 590
rack travel mm : 11.65
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1045
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

G20

rack travel mm : 10.10
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113
Combination No. : 0402646609
Injection pump
Pump designation : PE6P120A720RS7188
: -10
EP type number : 0412626924
Governor
Governor design. : RQV200...950PA725
: -11
Governor no. : 0421814033
Cust. part No. : 1340418

Customer-spec. information
Customer : SCANIA
Motor : DSC 11 36

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 230
Tolerance l/h : ± 20.0
Test nozzle holder
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.45
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 252.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1150

Rack travel in mm : 9.50
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 252.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

RATED SPEED

control lever
 position degree : 62.0
 tolerance degree : + 4.0

control lever
 position degree : 116.0
 tolerance degree : + 4.0

rack travel mm : 12.80
 Rated speed rpm : 995
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 10.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
 rack travel mm : 4.70
 Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 6.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 270

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.30
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 375
rack travel mm : 12.05
Tolerance mm : ± 0.05

Pressure hPa : 185
rack travel mm : 11.00
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0403246042

Injection pump
Pump designation : PES6MW100/72ORS1522
EP type number : 0413206023

Governor
Governor design. : RQV300...1300MW148
: -7
Governor no. : 0420083328

Cust. part No. : 0250748102

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : <1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 4.5

 Check tolerance
 cm³/1000S. : 7.0
 2nd speed rpm : 300
 Rack travel in mm : 4.20
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : ± 0.25

 Rated speed rpm : 1355
 guide sleeve
 travel mm : 9.32
 Tolerance mm : ± 0.25

 Rated speed rpm : 1078
 guide sleeve
 travel mm : 7.06
 Tolerance mm : ± 0.25

 Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : ± 0.25

 Rated speed rpm : 564
 guide sleeve
 travel mm : 2.60
 Tolerance mm : ± 0.25

 Rated speed rpm : 740
 guide sleeve
 travel mm : 3.93
 Tolerance mm : ± 0.25

 Rated speed rpm : 1720

guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 118.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 120.0
 tolerance degree : ± 4.0

 rack travel mm : 12.45
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5

 rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : ± 15

 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 4.30
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.0

Aneroid pressure
hPa : -
Rated speed rpm : > 00
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.45
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0403444154

Injection pump
Pump designation : PES4MW100/720RS1127
EP type number : 0413404103

Governor
Governor design. : RQV300...1300MW48-2
Governor no. : 0420083110

Cust. part No. : 0250746102

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

G28

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 7.85
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.40
 Tolerance mm : + 0.25
 Rated speed rpm : 1345
 guide sleeve
 travel mm : 8.59
 Tolerance mm : + 0.25
 Rated speed rpm : 877
 guide sleeve
 travel mm : 5.00
 Tolerance mm : + 0.25
 Rated speed rpm : 363
 guide sleeve
 travel mm : 2.05
 Tolerance mm : + 0.25
 Rated speed rpm : 413
 guide sleeve
 travel mm : 2.50
 Tolerance mm : + 0.25
 Rated speed rpm : 490
 guide sleeve
 travel mm : 2.93
 Tolerance mm : + 0.25
 Rated speed rpm : 1600
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

H01

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1330
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 114.0
 tolerance degree : + 4.0
 rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.85
Tolerance mm : + 0.05

Rated speed rpm : 100

CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.20
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 11.90
Tolerance mm : + 0.15

Rated speed rpm : 585
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 11.35
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 230
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585

Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.85
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0403446231

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0413406138

Governor
Governor design. : RQV300...1400MW48-8
Governor no. : 0420083175

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680715015

Outside diameter : 6.0

x inside diameter : 3.0

H03

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 8.05
 Tolerance mm : + 0.25
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1470
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 75.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 119.0

H04

tolerance degree : + 4.0
 rack travel mm : 9.90
 Rated speed rpm : 1445
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 88.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : ~~300~~
 rack travel mm : 8.05
 Tolerance mm : + 0.25
 Rated speed rpm : 100
 CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.95
 Tolerance mm : + 0.05
 Rated speed rpm : 750
 rack travel mm : 12.20
 Tolerance mm : + 0.10
 Rated speed rpm : 950
 rack travel mm : 11.95
 Tolerance mm : + 0.15
 Rated speed rpm : 1200
 rack travel mm : 11.15
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : < 200

Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.05
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.95
Test oil : ISO 4113
Combination No. : 0403476117
Injection pump
Pump designation : PES6MW100/72ORS1131
: -1
EP type number : 0413406165
Governor
Governor design. : RSV750...1200MWOA329
: -15
Governor no. : 0420085193
Cust. part No. : 0220748502

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 148.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

H06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180
Rack travel in mm : 13.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

2nd speed rpm : 750

Rack travel in mm : 5.05
Tolerance mm : + 0.25

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 104.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : + 4.0

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 750
rack travel mm : 5.05
Tolerance mm : + 0.25

rack travel mm : 2.00

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1180
rack travel mm : 13.15
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.15
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Tolerance mm : \pm 0.05
Rated speed rpm : 500
Pressure hPa : 500
rack travel mm : 2.20
Tolerance mm : \pm 0.15
Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.05

rack travel mm : 5.05
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 750

H08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0400074961

Injection pump
Pump designation : PES4M55C32ORS107-1
EP type number : 0410054977

Governor
Governor design. : RSF375/2250M18
Governor no. : 0420021017

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM616 (2.4 L)
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H09

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 40.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Del. quantity
cm³/1000 strokes : 7.5
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0
rack travel mm : 8.40
Rated speed rpm : 2500
rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : 1.45

LOW IDLE

H10

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 11.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.10
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 12.90
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 12.60
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 39.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2200
 Spreed
 Del. quantity
 cm³/1000 strokes : 41.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
 rack travel mm : 8.40
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.13
 Del. quantity
 cm³/1000 strokes : 53.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 375
 rack travel mm : 6.10
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 8.3

Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Check tolerance
 cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
 degree : < 30.00

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0400074978

Injection pump
Pump designation : PES4M50C320RS103
EP type number : 0410054023

Governor
Governor design. : RSF375/2250M19
Governor no. : 0420021018

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM615 (2.0 L)
Power KW : 44.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

H12

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 6.90
Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

H13

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 12.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.50
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 11.40
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2200
 Spreed
 Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Check tolerance
 cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
 degree : < 30.00

HIGH IDLE

Rated speed rpm : 2500
 rack travel mm : 6.90
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm³/1000 strokes : 55.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 375
 rack travel mm : 6.50
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 8.8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0400075991

Injection pump
Pump designation : PES5M55C320RS108-1
EP type number : 0410055992

Governor
Governor design. : RSF350/2300M15
Governor no. : 0420021014

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM617 (3.0 L)
Power KW : 65.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

H15

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 40.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350
Del. quantity
cm³/1000 strokes : 7.5

Tolerance
cm³/1000 strokes : +- 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : +- 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : +- 0.5
Check tolerance
cm³/1000S. : +- 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 8.80
Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 11.0
tolerance degree : +- 2.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 4.70
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 770
Tolerance 1/min : +- 50

Load pick-up

Rated speed rpm : 250
CRT mm min. : > 10.00
Rated speed rpm : 1000
CRT mm max. : 1.45
rack travel mm : 6.10
Rated speed rpm : 750

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : +- 0.05

Rated speed rpm : 1800
rack travel mm : 13.10
Tolerance mm : +- 0.10

Rated speed rpm : 2200
rack travel mm : 12.60
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 39.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 2.0
Spreed

Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2200
Spreed
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.80
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 53.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.10

Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 8.3
Check tolerance
cm³/1000S. : + 1.8
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 30.00

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 11.0
tolerance degree : + 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.03.95
Test oil : ISO 4113
Combination No. : 0400844095
Injection pump
Pump designation : PES4A95D410RS2809
EP type number : 0410894993
Governor
Governor design. : RQV300...1400AB1065
Governor no. : 0420212227
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 9.95
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 65.5
Tolerance
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 8.50
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1450
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 115.0

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tolerance degree : + 4.0
 rack travel mm : 8.90
 Rated speed rpm : 1455
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1670

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.50
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 9.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 9.95
 Tolerance mm : + 0.05
 Rated speed rpm : 400
 rack travel mm : 10.80
 Tolerance mm : + 0.10
 Rated speed rpm : 670
 rack travel mm : 10.60
 Tolerance mm : + 0.10
 Rated speed rpm : 1060
 rack travel mm : 10.25
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

Check tolerance
cm³/1000S. : 5.5

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 49.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1455
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.95
Test oil : ISO 4113
Combination No. : 0402046827
Injection pump
Pump designation : PES6P120A320RS3284
EP type number : 0412026749
Governor
Governor design. : RQ275/1050PA999-3
Governor no. : 0421801598
Cust. part No. : CCEP5119A

Customer-spec. information
Customer : RVI
Motor : MIDR/PR 062045
Power kW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413071
Inlet press. bar : 2.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 10.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1128
Tolerance 1/min : ± 8

rack travel mm : -6.30
Rated speed rpm : 1205
Tolerance 1/min : ± 15

rack travel mm : -9.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.50
Tolerance mm : ± 0.10

rack travel mm : -8.10
Rated speed rpm : 340
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm max. : < -4.00

TORQUE CONTROL

Rated speed rpm : 1050
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.20
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 360
rack travel mm : -0.40
Tolerance mm : ± 0.20

Pressure hPa : 200
rack travel mm : -1.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 81.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1128
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.95
Test oil : ISO 4113

Combination No. : 0402046830

Injection pump
Pump designation : PES6P120A320RS3290
EP type number : 0412026751

Governor
Governor design. : RQ275/950PA999-4
Governor no. : 0421801612

Cust. part No. : CCEP 5123A

Customer-spec. information

Customer : RVI
Motor : MIDR/PRO62045
Power KW : 151.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

H24

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.85
 Tolerance mm : \pm 0.05

Del. quantity
 cm³/1000 strokes : 142.0

Tolerance
 cm³/1000 strokes : \pm 1.0

Check tolerance
 cm³/1000S. : \pm 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 250

Rack travel in mm : -7.80
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 142.0
 Tolerance
 cm³/1000 strokes : \pm 1.0

Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

rack travel mm : -1.00
 Rated speed rpm : 1018
 Tolerance 1/min : \pm 8

rack travel mm : -8.80
 Rated speed rpm : 1110
 Tolerance 1/min : \pm 15

rack travel mm : -12.35
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1250

LOW IDLE

Testing:

Rated speed rpm : 250
 rack travel mm : -7.80
 Tolerance mm : \pm 0.10

rack travel mm : -10.85
 Rated speed rpm : 335
 Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm max. : $<$ -6.80

TORQUE CONTROL

Rated speed rpm : 950
 Tolerance mm : \pm 0.10

Rated speed rpm : 500
 rack travel mm : -4.00
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.90
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : -0.45
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -1.45
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 158.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1018
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 7.80
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.95
Test oil : ISO 4113
Combination No. : 0402646910
Injection pump
Pump designation : PE6P120A320RS7138
: -10
EP type number : 0412626922
Governor
Governor design. : RQV200...1100PA712
: -5
Governor no. : 0421813951
Cust. part No. : 1318823

Customer-spec. information
Customer : SCANIA
Motor : DSC908

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Test nozzle holde
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Test Lines : 1680750008
Outside diameter : 6.0

H27

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30

Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 5.30
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

H28

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 118.0
tolerance degree : ± 4.0

rack travel mm : 12.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 9.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 5.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 250

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.15
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 13.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.35
Tolerance mm : ± 0.05

Pressure hPa : 220
rack travel mm : 10.80
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113

Combination No. : 0402646937

Injection pump
Pump designation : PE6P120A72ORS7188
: -100

EP type number : 0412626925

Governor
Governor design. : RQV200...950PA725-7
Governor no. : 0421813803

Cust. part No. : 1333121

Customer-spec. information
Customer : SCANIA
Motor : DSC11 21

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : +- 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 220.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : +- 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 9.50
Tolerance mm : +- 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

J03

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 112.0
tolerance degree : +- 4.0

control lever
position degree : 60.0
tolerance degree : +- 4.0

rack travel mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1120
Tolerance 1/min : +- 15

rack travel mm : 7.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 10.0
tolerance degree : +- 4.0

control lever
position degree : 62.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : +- 0.10

Rated speed rpm : 150

CRT mm min. : > 6.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 11.00
Tolerance mm : + 0.15

Pressure hPa : 440
rack travel mm : 12.05
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.03.95
Test oil : ISO 4113

Combination No. : 0402746647

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0412726933

Governor
Governor design. : RQV275...1100PA1208K
Governor no. : 0421815459

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.4000

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

J05

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 273.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.75
Tolerance mm : ± 0.20

Rated speed rpm : 1155
guide sleeve
travel mm : 9.75
Tolerance mm : ± 0.15

Rated speed rpm : 791
guide sleeve
travel mm : 6.42
Tolerance mm : ± 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.77
Tolerance mm : ± 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50

J06

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1310

Rack travel in mm : 10.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 273.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 117.0
tolerance degree : ± 4.0

rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 7.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 13.10
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 13.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.40
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 290
rack travel mm : 10.50
Tolerance mm : + 0.20

Pressure hPa : 520
rack travel mm : 12.50
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 170
Check
speed 1/min : > 150
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 296.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.95
Test oil : ISO 4113

Combination No. : 0402746909

Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0412726848

Governor
Governor design. : RQV275...1000PA1001
 : -1
Governor no. : 0421813936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information

Customer : RVI
Motor : MIDR 063540 J/3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	310.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm :	-8.60
Tolerance mm :	+ 0.20
Del. quantity	
cm ³ /1000 strokes :	31.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 5.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1150
<hr/>	
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	600
Aneroid pressure	
hPa :	1000
Del. quantity	
cm ³ /1000 strokes :	310.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0

Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree :	302.0
tolerance degree :	+ 4.0
<hr/>	
rack travel mm :	-1.00
Rated speed rpm :	1070
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	-9.70
Rated speed rpm :	1210
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	-13.25
Tolerance mm :	+ 0.55
Rated speed rpm :	1750

LOW IDLE

control lever	
position degree :	246.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	-8.60
Tolerance mm :	+ 0.10

Rated speed rpm :	200
-------------------	-----

CRT mm max. :	< -7.20
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CONTINUOUS-ACTION CONTROL

Rated speed rpm :	370
-------------------	-----

TORQUE CONTROL

Rated speed rpm :	1000
Tolerance mm :	+ 0.10

Rated speed rpm :	500
rack travel mm :	-5.50
Tolerance mm :	+ 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -5.00
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -3.80
Tolerance mm : ± 0.20

Pressure hPa : 600
rack travel mm : -0.95
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 225
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -8.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.95
Test oil : ISO 4113

Combination No. : 0402746931

Injection pump
Pump designation : PES6P120A32ORS7236
EP type number : 0412726848

Governor
Governor design. : RQV275...1000PA1001
: -2
Governor no. : 0421813989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25

Tolerance mm : \pm 0.30

 Del. quantity
 cm³/1000 strokes : 74.0

 Tolerance
 cm³/1000 strokes : \pm 1.0

 Check tolerance
 cm³/1000S. : \pm 4.0

 Spreed

 Tolerance
 cm³/1000 strokes : 4.0

 Check tolerance
 cm³/1000S. : 7.0

 Rated speed rpm : 600

 Rack travel in mm : 13.35
 Tolerance mm : \pm 0.05

 Del. quantity
 cm³/1000 strokes : 290.0

 Tolerance
 cm³/1000 strokes : \pm 2.0

 Check tolerance
 cm³/1000S. : \pm 5.0

 Spreed
 Tolerance
 cm³/1000 strokes : 8.0

 Check tolerance
 cm³/1000S. : 12.0

 2nd speed rpm : 300

 Rack travel in mm : -8.20
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : \pm 2.5
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

J13

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1190

 Rack travel in mm : 13.20
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 290.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

RATED SPEED

control lever
 position degree : 301.0
 tolerance degree : \pm 4.0

 rack travel mm : -1.00
 Rated speed rpm : 1070
 Tolerance 1/min : \pm 5

 rack travel mm : -9.30
 Rated speed rpm : 1205
 Tolerance 1/min : \pm 15

 rack travel mm : -12.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 247.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm max. : < -6.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 1000
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : -4.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.80
Tolerance mm : + 0.30

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -2.60
Tolerance mm : + 0.20

Pressure hPa : 480
rack travel mm : -0.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

J14

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1070

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.95
Test oil : ISO 4113

Combination No. : 0402746949

Injection pump
Pump designation : PES6P120A72ORS7224
: -2
EP type number : 0412726893

Governor
Governor design. : RQV275...1100PA975
: -3K
Governor no. : 0421815350

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.406

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1417413076

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : +- 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.15
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 218.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.90
Tolerance mm : ± 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 10.40
Tolerance mm : ± 0.15

Rated speed rpm : 750
guide sleeve
travel mm : 6.10
Tolerance mm : ± 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 3.60
Tolerance mm : ± 0.25

Rated speed rpm : 1360

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1235

Rack travel in mm : 10.30
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 11.70
Rated speed rpm : 1160
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 12.75
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 300
rack travel mm : 11.20
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 900
rack travel mm : 7.40
Tolerance mm : ± 0.20

Rated speed rpm : 900

Pressure hPa : 380
rack travel mm : 9.00
Tolerance mm : ± 0.20

Pressure hPa : 710
rack travel mm : 11.50
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 170
Check
speed 1/min : > 150
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1160
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.95
Test oil : ISO 4113
Combination No. : 0402746950
Injection pump
Pump designation : PES6P120A720RS7224
 : -2
EP type number : 0412726893
Governor
Governor design. : RQV275...1100PA975
 : -4K
Governor no. : 0421815351
Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.320

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

J20

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.15
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 192.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.70
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.90
Tolerance mm : ± 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 10.40
Tolerance mm : ± 0.15

Rated speed rpm : 750
guide sleeve
travel mm : 6.10
Tolerance mm : ± 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 3.60
Tolerance mm : ± 0.25

Rated speed rpm : 1360

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1235

Rack travel in mm : 10.30
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 192.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 10.40
Rated speed rpm : 1170
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.45
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 11.10
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 10.20
Tolerance mm : ± 0.15

Rated speed rpm : 400
rack travel mm : 9.60
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.80
Tolerance mm : ± 0.20

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.70
Tolerance mm : ± 0.20

Pressure hPa : 570
rack travel mm : 10.55
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 170
Check
speed 1/min : > 150
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1170
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.03.95
Test oil : ISO 4113

Combination No. : 0403274005

Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0413204017

Governor
Governor design. : RSV350...1200MWOA356
Governor no. : 0420085231

Cust. part No. : 0250740802

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 51.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0

2nd speed rpm : 350

Rack travel in mm : 3.90
 Tolerance mm : ± 0.20

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 108.0
 tolerance degree : ± 4.0

rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1450

rack travel mm : 4.00
 Rated speed rpm : 1355

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 3.90

Testing:

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 13.90
 Tolerance mm : ± 0.05

Rated speed rpm : 750
 rack travel mm : 13.90
 Tolerance mm : ± 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 13.90
 Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 1,7 A
Edition : 18.02.91
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE3/10F2100L353
Type number : 0 460 403 013
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 392 SHJ

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0,4
> (from BDC): 0,02(0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 2.10...2.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Setting value bar: 4.20...4.80
Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 65.00...66.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 750
Del. quantity cm3/
> 1000S.: 46.10...47.10
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 460
Del. quantity cm3/
> 1000S.: 8.50...12.50
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 34.00...40.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...61.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Charge press hPa: 1000
Inj.-qty. cm3/
difference> 1000S.: 10.00...12.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
Charge press hPa: 1000
TD-travel

difference> mm: 0.30...0.50
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1500
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: 0.10...0.30
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 1000
TD travel mm: 6.10...6.90
> mm: (5.80...7.20)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 2.10...2.50
> mm: (1.60...3.00)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1900
Charge press. hPa: 1000
TD travel mm: 5.40...6.20
> mm: (5.10...6.50)

Shutoff
electromagnet>Volt: 12
6th speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 3.90...4.70
> mm: (3.60...5.00)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.90...8.50
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.20...4.80
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 600
Supply-pump
pressure> bar: 2.30...2.90

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)
2nd speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750*
Charge-air pressure-setting
point> hPa: 350
LDA-stroke mm: 6.2
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 55.70...56.50
> 1000S.: (53.00...58.50)

3rd speed 1/min: 2500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: -

5th speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 34.00...40.00
> 1000S.: (33.00...41.00)

9th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 55.20...57.60
> 1000S.: (54.20...58.80)

11th speed 1/min: 750
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 60.50...63.50
> 1000S.: (59.50...64.50)

12th speed 1/min: 1500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.00...66.00
> 1000S.: (63.50...67.50)

18th speed 1/min: 750
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 46.10...47.10
> 1000S.: (44.10...49.10)
20th speed 1/min: 600
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 42.00...44.00
> 1000S.: (40.00...46.00)

Electr. shutoff:

1st speed 1/min: 460
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 460
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.50...12.50
> 1000S.: (6.50...14.50)

Dispersion cm³/: 3.0
> 1000S.: (3.0)

2nd speed 1/min: 500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 4.00...10.00
> 1000S.: (2.00...12.00)

3rd speed 1/min: 600
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 0.00...7.00
> 1000S.: (0.00...7.00)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

2nd speed 1/min: 1500
Charge press. hPa: 1000
Inj.-qty. cm³/: 10.00...12.00
difference> 1000S.: (10.00...12.00)
Shutoff

electromagnet Volt: 12
4th speed 1/min: 1500
Charge press. hPa: 1000
Inj.-qty. cm³/: 15.00...21.00
difference> 1000S.: (15.00...21.00)
Shutoff

electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):

1st speed 1/min: -
2nd speed 1/min: 1500
Charge press. hPa: 1000
TD-travel : 0.30...0.50
difference> mm: (0.30...0.50)

Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: -
2nd speed 1/min: 1500
Charge press. hPa: 1000
Supply pump-
pressure > : 0.10...0.30
difference> bar: (0.10...0.30)
Shutoff

electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 42.00...68.00
> 1000S.: (42.00...68.00)

4th speed 1/min: 100
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 35.00...61.00
> 1000S.: (35.00...61.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm: -
KF	mm: 5,6...6,0
MS	mm: 0,6...1,0
SVS max.	mm: 0,8
LDA stroke	mm: 6,2

Remarks:

: ..12.
: 50 (6.50...14.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 2,5 D
Edition : 18.02.91
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE3/10F1100R276-3
Type number : 0 460 403 014
Customer Part-No. : 1 967 077 C1

Customer-specific information
Customer : CASE

Engine : D155/440

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 020

Opening
Pressure> bar: 172.00...175.00

Perforated-plate
diameter> mm: 0.6

Test inj. tubing : 1 688 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Start of delivery block
Piston stroke mm: 1,0
> mm: 0,98...1,02
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 800

Setting value mm: 2.20...2.60

Supply-pump pressure

Speed 1/min: 800
Setting value bar: 4.00...4.60

Full-load del. w/out charge press.:

Speed 1/min: 800
Del. quantity cm³/
> 1000S.: 61.00...62.00
Dispersion cm³/: 2,5
> 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 13.00...17.00
Del. quantity cm³/: 2.5
> 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1150
Del. quantity cm³/
> 1000S.: 41.00...47.00

Start:

Speed 1/min: 100
Del. quantity cm³/: 75.00...125.00
mind> 1000S.: 75.00

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1050
TD travel mm: 3.30...4.10
> mm: (3.00...4.40)
3rd speed 1/min: 800
TD travel mm: 1.90...2.30
> mm: (1.40...2.80)
4th speed 1/min: 600
TD travel mm: 0.30...1.10
> mm: (0.00...1.40)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure> bar: 2.90...3.50
2nd speed 1/min: 800
Supply-pump
pressure> bar: 4.00...4.60
3rd speed 1/min: 1050
Supply-pump

pressure> bar: 4.80...5.40
Overflow quantity at overflow valve:
1st speed 1/min: 500
Overflow : 41.70...83.40
quantity> cm3/10s: (26.70...98.40)
2nd speed 1/min: 1050
Overflow : 55.60...139.00
quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 1250
Del. quantity cm3/: 0.00...3.00
> 1000s.: (0.00...3.00)
3rd speed 1/min: 1230
Del. quantity cm3/: 0.00...10.00
> 1000s.: (0.00...10.00)
4th speed 1/min: 1180
Del. quantity cm3/: 10.00...40.00
> 1000s.: (10.00...40.00)
5th speed 1/min: 1150
Del. quantity cm3/: 41.00...47.00
> 1000s.: (39.50...48.50)
9th speed 1/min: 1050
Del. quantity cm3/: 60.50...63.50
> 1000s.: (59.50...64.50)
12th speed 1/min: 800
Del. quantity cm3/: 61.00...62.00
> 1000s.: (59.20...63.80)
20th speed 1/min: 500
Del. quantity cm3/: 57.00...61.00
> 1000s.: (56.00...62.00)

Mech. shutoff:

1st speed 1/min: 1050
Del. quantity cm3/: 0.00...3.00
> 1000s.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 350
Del. quantity cm3/: 13.00...17.00
> 1000s.: (11.00...19.00)
Dispersion cm3/: 2.5
> 1000s.: (3.5)
2nd speed 1/min: 450
Del. quantity cm3/: 0.00...4.00
> 1000s.: (0.00...4.00)

Automatic starting fuel delivery:

1st speed 1/min: 300
Del. quantity cm3/: 80.00...110.00
> 1000s.: (80.00...110.00)

2nd speed 1/min: 400
Del. quantity cm3/: 60.00...80.00
> 1000s.: (60.00...80.00)

4th speed 1/min: 100
Del. quantity cm3/: 75.00...125.00
> 1000s.: (75.00...125.00)

Mounting and assembly dimensions:

Designation

K mm: 3,2...3,4
KF mm: 5,1...5,3
MS mm: 1,1...1,5
SVS max. mm: 4,9

Remarks:

: ...17
: .00(11.00...19.00)2.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
 Edition : 03.12.92
 replaces : -
 Calibrating oil : ISO-4113
 Injection pump : VE3/10F1500L483
 Type number : 0 460 403 016
 Customer Part-No. :

Customer-specific information
 Customer : VM

Engine : HR 394 H

Power KW: 39

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
 return>temp. > °C
 with>thermometer> : 40.00...48.00
 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
 assembly> : 1 688 901 022

Opening
 Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
 x Wall>thickness : 2.00
 x Length> mm: 450

Start of delivery
 Prestroke mm: -
 > (from BDC): -

Injection-pump setting values
 Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
 Setting value mm: 2.50...2.90
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
 Setting value bar: 5.30...5.90
 Shutoff
 electromagnet>Volt: 12

Full-load del. with charge press.:

Dispersion cm³/: 3.5
 > 1000S.: (3.5)

Full-load del. w/out charge press.:

Speed 1/min: 1200
 Del. quantity cm³/
 > 1000S.: 44.00...45.00

Shutoff
 electromagnet>Volt: 12.0
 Dispersion cm³/: 3.5
 > 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 460
 Del. quantity cm³/
 > 1000S.: 10.50...14.50

Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 3.5
 > 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1620
 Del. quantity cm³/
 > 1000S.: 21.00...27.00

Shutoff
 electromagnet>Volt: 12

Start:

Speed 1/min: 100
 Del. quantity cm³/: 60.00...100.00
 mind> 1000S.: 60.00
 Shutoff
 electromagnet>Volt: 12

Load-dependent start of delivery:
 Inj.-qty.dif.measurement:

Speed 1/min: 1200
 Inj.-qty. cm³/
 difference> 1000S.: 15.00...17.00 #
 Shutoff
 electromagnet>Volt: 12
 SP press.-dif.measurement

1.Speed 1/min: 1200
 Supply pump

pressure>
difference> bar: 0.10...0.30 #
Shutoff
electromagnet Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1500
TD travel mm: 3.60...4.40
> mm: (3.30...4.70)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
TD travel mm: 2.50...2.9G
> mm: (2.00...3.40)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 1.30...2.10
> mm: (1.00...2.40)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

2nd speed 1/min: 600
Supply-pump
pressure> bar: 2.80...3.40
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
Supply-pump
pressure> bar: 5.30...5.90
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1500
Supply-pump
pressure> bar: 6.60...7.20
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm3/10s: (26.70...98.40)
2nd speed 1/min: 1500
Shutoff
electromagnet>Volt: 12
Overflow : 55.50...138.80
quantity> cm3/10s: (40.50...153.80)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 1700
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 1620
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 21.00...27.00
> 1000S.: (18.00...30.00)
8th speed 1/min: 1550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...47.00
> 1000S.: (36.00...48.00)
9th speed 1/min: 1500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 43.50...46.50
> 1000S.: (42.00...48.00)
12th speed 1/min: 1200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 44.00...45.00
> 1000S.: (42.00...47.00)
20th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.50...48.50
> 1000S.: (44.00...50.00)

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 460
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 10.50...14.50
> 1000S.: (8.50...16.50)
Dispersion cm3/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 650
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.00...8.00
> 1000S.: (1.00...9.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Inj.-qty. cm³/ : 18.0...26.0 '
difference> 1000s.: -
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1200
TD-travel : 0.80...1.00 '
difference> mm: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.00...95.00
> 1000s.: (65.00...95.00)

2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...55.00
> 1000s.: (35.00...55.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 60.00...100.00
> 1000s.: (60.00...100.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.8...6.2
MS	mm: 0.6...1.0
SVS max.	mm: 2.8
Ya	mm: 38.2 +2
Yb	mm: 55.5 +4.1

Remarks:

: ...14
: .50(8.50...16.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 09.07.92
Calibrating oil : ISO-4113
Injection pump : VE3/10F1600L483
Type number : 0 460 403 016
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 394 H

Power KW: 39

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40...48
Electronically> : 42...50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
Setting value mm: 2.50...2.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Setting value bar: 5.30...5.90
Shutoff

electromagnet>Volt: 12
Full-load del. with charge press.:

Speed 1/min: 1200
Del. quantity cm3/
> 1000S.: 45.50...46.50

Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.5
> 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 400
Del. quantity cm3/
> 1000S.: 10.50...14.50

Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.5
> 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1620
Del. quantity cm3/
> 1000S.: 21.00...27.00

Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 60.00...100.00
mind> 1000S.: 60.00

Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1200
Charge press hPa: 12
Inj.-qty. cm3/
difference> 1000S.: -18.00...26.00*

Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1200
TD-travel
difference> mm: -0.80...1.00*

Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1200
Supply pump
pressure>
difference> bar: -0.10...0.30#

Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1500
TD travel mm: 3.60...4.40
> mm: (3.30...4.70)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
TD travel mm: 2.50...2.90
> mm: (2.00...3.40)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 1.30...2.10
> mm: (1.00...2.40)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 600
Supply-pump
pressure> bar: 2.80...3.40

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
Supply-pump
pressure> bar: 5.30...5.90

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1500
Supply-pump
pressure> bar: 6.60...7.20

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)

2nd speed 1/min: 1500
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 1700
Shutoff

electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 1620

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 21.00...27.00
> 1000S.: (18.00...30.00)
8th speed 1/min: 1550

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...47.00
> 1000S.: (36.00...48.00)
9th speed 1/min: 1500

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 44.00...47.00
> 1000S.: (42.50...48.50)
12th speed 1/min: 1200

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.50...46.50
> 1000S.: (43.50...48.50)
20th speed 1/min: 600

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.00...49.00
> 1000S.: (44.50...50.50)

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 10.50...14.50
> 1000S.: (8.50...16.50)

Dispersion cm³/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 550

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

3rd speed 1/min: 440
Shutoff
electromagnet>Volt: 12

Del. quantity cm³/: 2.00...8.00
> 1000S.: (1.00...9.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Inj.-qty. cm3/ : -15.0..17.0#
difference> 1000S.: -

Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 1200
Inj.-qty. cm3/ : -18.0..26.0*
difference> 1000S.: -

Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1200
TD-travel : -0.80...1.00*
difference> mm: -

Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):

1st speed 1/min: 1200
Supply pump-
pressure > : -0.10...0.30#
difference> bar: -

Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 65.00...95.00
> 1000S.: (65.00...95.00)

2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
> 1000S.: (35.00...55.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...100.00
> 1000S.: (60.00...100.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4
KF mm: 5.8...6.2
MS mm: 0.6...1.0

K09

Ya mm: 37.2...39.2
Yb mm: 51.5...59.7

Remarks:

: ...14
: .50(8.50...16.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 02.06.92
replaces : 07.84
Calibrating oil : ISO4113

Injection pump : VE4/10F1900L106
Type number : 0 460 404 026

Customer-specific information
Customer : VM MOTORI

Engine : HR 492 HT9

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40...48
Electronically> : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1600
Charge press. hPa: 750
Setting value mm: 5.10...5.50

Supply-pump pressure

Speed 1/min: 1600
Charge press hPa: 750
Setting value bar: 5.50...6.10

Full-load del. with charge press.:

Speed 1/min: 1600
Charge press. hPa: 750
Del. quantity cm3/
> 1000S.: 47.00...48.00
Dispersion cm3/: 3.0
> 1000S.: -

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 32.00...35.00

Low-idle speed regulation

Speed 1/min: 350
Charge press hPa: -
Del. quantity cm3/
> 1000S.: 16.00...20.00
Del. quantity cm3/: 2.5
> 1000S.: -

Full-load speed regulation

Speed 1/min: 1900
Charge press hPa: 750
Del. quantity cm3/
> 1000S.: 43.50...46.50

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm3/: -
mind> 1000S.: 65.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
Charge press hPa: 750
TD travel mm: 1.00...1.80
> mm: (0.70...2.10)
2nd speed 1/min: 1600
Charge press hPa: 750
TD travel mm: 5.10...5.50
> mm: (4.60...6.00)
3rd speed 1/min: 1900
Charge press hPa: 750
TD travel mm: 6.70...7.50
> mm: (6.40...7.80)

Supply-pump pressure characteristic:

1st speed 1/min: 400

Charge press. hPa: 750
Supply-pump
pressure> bar: 1.50...2.10
2nd speed 1/min: 1600
Charge press. hPa: 750
Supply-pump
pressure> bar: 5.50...6.10
3rd speed 1/min: 1900
Charge press. hPa: 750
Supply-pump
pressure> bar: 6.80...7.40

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 55.50...111.10
quantity> cm3/10s: (40.50...126.10)
2nd speed 1/min: 1900
Overflow : 55.50...111.10
quantity> cm3/10s: (40.50...126.10)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750
Charge-air pressure-setting
point> hPa: 300
LDA-stroke mm: 4.2
Del. quantity cm3/: 41.50...44.50
> 1000s.: (40.00...46.00)
2nd speed 1/min: 2100
Charge press. hPa: 750
Del. quantity cm3/: ...1.00
> 1000s.: -
3rd speed 1/min: 2050
Charge press. hPa: 750
Del. quantity cm3/: 2.00...
> 1000s.: -
4th speed 1/min: 2030
Charge press. hPa: 750
Del. quantity cm3/: 17.00...23.00
> 1000s.: (16.00...24.00)
5th speed 1/min: 1900
Charge press. hPa: 750
Del. quantity cm3/: 43.50...46.50
> 1000s.: (41.00...49.00)
6th speed 1/min: 1600
Charge press. hPa: -
Del. quantity cm3/: 31.00...34.00
> 1000s.: (29.80...35.20)
7th speed 1/min: 1600
Charge press. hPa: 750
Del. quantity cm3/: 47.00...48.00
> 1000s.: (44.80...50.20)
8th speed 1/min: 600
Charge press. hPa: -
Del. quantity cm3/: 32.00...35.00
> 1000s.: (30.50...36.50)

Mech. shutoff:

1st speed 1/min: 1900

Idle delivery:

1st speed 1/min: 350
Del. quantity cm3/: 16.00...20.00
> 1000s.: 14.00...22.00
Dispersion cm3/: 2.5
> 1000s.: -
2nd speed 1/min: 430
Del. quantity cm3/: 2.60...
> 1000s.: -
3rd speed 1/min: 500
Del. quantity cm3/: ...1.00
> 1000s.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: 48.00...
> 1000s.: -

2nd speed 1/min: 450
Del. quantity cm3/: ...47.50

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.7...6.0
MS	mm: 1.4...1.6
SVS max.	mm: 3.6
XK	mm: 20.2...22.2
XL	mm: 14.2...17.6
Ya	mm: 37.2...39.2
Yb	mm: 55.7...63.5

Remarks:

: .0014.00...22.00 2.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 D
Edition : 18.02.91
replaces : 09.11.89
Calibrating oil : ISO-4113
Injection pump : VE4/10F2100L168-1
Type number : 0 460 404 042
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 492 HJ

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 800
Setting value mm: 1.80...2.20
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 800
Setting value bar: 3.10...3.70
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 800
Del. quantity cm3/
> 1000S.: 60.50...61.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 40.50...41.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 400
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 800
Del. quantity cm3/
> 1000S.: 27.00...33.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 37.00...67.00
mind> 1000S.: 37.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: 8.00...14.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: 0.90...1.10
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1500
Supply pump
pressure>
difference> bar: 0,1...0,3
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 800
TD travel mm: 7.60...8.40
> mm: (7.30...8.70)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 800
TD travel mm: 1.80...2.20
> mm: (1.30...2.70)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1500
Charge press. hPa: 800
TD travel mm: 4.40...5.20
> mm: (4.10...5.50)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 800
Supply-pump
pressure> bar: 6.90...7.50
Shutoff
electromagnet>Volt: 12

2nd speed 1/min: 1000
Charge press. hPa: 800
Supply-pump
pressure> bar: 3.10...3.70
Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 600
Charge press. hPa: 800
Supply-pump
pressure> bar: 1.80...2.40
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm3/10s: (26.70...98.40)
2nd speed 1/min: 2100
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700*
Charge-air pressure-setting
point> hPa: 400
LDA-stroke mm: 6,1
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.00...53.00
> 1000s.: (50.00...55.00)

3rd speed 1/min: 2450
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 1.00...9.00
> 1000s.: (0.50...9.50)

5th speed 1/min: 2300
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 27.00...33.00
> 1000s.: (26.00...34.00)

9th speed 1/min: 2100
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.50...55.50
> 1000s.: (51.00...57.00)

12th speed 1/min: 1500
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.50...61.50
> 1000s.: (59.00...63.00)

18th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.50...41.50
> 1000s.: (38.50...43.50)

20th speed 1/min: 600
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 63.00...66.00
> 1000s.: (61.50...67.50)

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm3/: 0.00...3.00
> 1000s.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 13.00...17.00
> 1000s.: (10.00...20.00)
Dispersion cm3/: 3.0
> 1000s.: (3.0)
2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.50...8.50
> 1000s.: (0.50...10.50)
4th speed 1/min: 600
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...2.00
> 1000s.: (0.00...2.00)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm3/ : 3.00...5.00
difference> 1000s.: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
3rd speed 1/min: 1500
Inj.-qty. cm3/: 8.00...14.00
difference> 1000s.: (8.00...14.00)
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):

1st speed 1/min: 1500
TD-travel : 0.90...1.10
difference> mm: (0.90...1.10)
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500
Supply pump-
pressure > : 0.10...0.30
difference> bar: (0.20...0.20)
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.00...65.00
> 1000s.: (45.00...65.00)

2nd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
> 1000s.: (35.00...55.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...67.00
> 1000s.: (37.00...67.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3,2...3,4
KF mm: 5,6...6,0
MS mm: 0,6...1,0
SVS max. mm: 3,5
LDA stroke mm: 6,1
XK mm: 17,0...19,0
XL mm: 8,6...12,0

Remarks:

: ...17
: .00(10.00...20.00)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 H
Edition : 18.02.91
replaces : 20.07.88
Calibrating oil : ISO-4113
Injection pump : VE4/10F2100L269
Type number : 0 460 404 050
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 492 HJ

Power KW: 82
Speed 1/min: -

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Indicator setting
Piston stroke> mm: 1.0
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000

Charge press. hPa: 1000
Setting value mm: 1.50...1.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 4.40...5.00
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 66.00...67.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700
Del. quantity cm3/
> 1000S.: 53.00...54.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 450
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 27.00...33.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 47.00...67.00
mind> 1000S.: 47.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm³/
difference> 1000S.: 8.00...14.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: 0.90...1.10
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1500
Supply pump
pressure>
difference> bar: 0.10...0.30
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 1000
TD travel mm: 7.10...7.90
> mm: (6.80...8.20)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.50...1.90
> mm: (1.00...2.40)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 4.10...4.90
> mm: (3.80...5.20)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.50...8.10
Shutoff
electromagnet>Volt: 12

2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.40...5.00
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 700

Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.30...3.90
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)
2nd speed 1/min: 2100
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700
Charge-air pressure-setting
point> hPa: 450
LDA-stroke mm: 6.1
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 62.00...63.00
> 1000S.: (60.00...65.00)

3rd speed 1/min: 2450
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...8.00
> 1000S.: (0.00...8.00)

5th speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 27.00...33.00
> 1000S.: (26.00...34.00)

9th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 57.70...60.70
> 1000S.: (56.20...62.20)

12th speed 1/min: 1500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 66.00...67.00
> 1000S.: (64.50...68.50)

16th speed 1/min: 600
Charge press. hPa: 1000
Shutoff
electromagnet>volt: 12

Del. quantity cm3/: 52.50...54.50
> 1000H.: (52.00...55.00)
18th speed 1/min: 700
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 53.00...54.00
> 1000S.: (51.00...56.00)
20th speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 67.50...70.50
> 1000S.: (66.00...72.00)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 13.00...17.00
> 1000S.: (10.00...20.00)
Dispersion cm3/: 3.0
> 1000S.: (3.0)
2nd speed 1/min: 475
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...13.00
> 1000S.: (5.00...15.00)
4th speed 1/min: 550
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.50...5.50
> 1000S.: (0.50...5.50)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm3/ : 3.00...5.00
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Inj.-qty. cm3/: 8.00...14.00
difference> 1000S.: (8.00...14.00)
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : 0.90...1.10

difference> mm: (0.90...1.10)
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):
1st speed 1/min: 1500
Supply pump-
pressure > : 0.10...0.30
difference> bar: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 55.00...75.00
> 1000S.: (55.00...75.00)

2nd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...57.00
> 1000S.: (37.00...57.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 47.00...67.00
> 1000S.: (47.00...67.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3,2...3,4
KF	mm: 5,6...6.0
MS	mm: 0,6...1,0
LDA stroke	mm: 6,1
XK	mm: 17.0...19.0
XL	mm: 10.3...13.7

Remarks:

: ...17
: .00(10.00...20.00)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 02.94
replaces : 13.07.88
Calibrating oil : ISO-4113

Injection pump : VE4/10F2100L168-2
Type number : 0 460 404 051
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 492 HT

Power KW: 76
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 800
Setting value mm: 4.60...5.00
Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 800
Setting value bar: 4.80...5.40
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 800
Del. quantity cm3/
> 1000S.: 56.50...57.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 45.50...46.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 400
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 800
Del. quantity cm3/
> 1000S.: 27.00...33.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 37.00...67.00
mind> 1000S.: 37.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500

Charge press hPa: -
Inj.-qty. cm3/
difference> 1000S.: - 8.0...-14.0 "
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
Charge press hPa: -
TD-travel
difference> mm: - 0.9...1.1 "
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 800
TD travel mm: 7.60...8.40
> mm: (7.30...8.70)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Charge press hPa: 800
TD travel mm: 4.60...5.00
> mm: (4.10...5.50)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press hPa: 800
TD travel mm: 1.60...2.40
> mm: (1.30...2.70)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 800
Supply-pump
pressure> bar: 6.90...7.50

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Charge press. hPa: 800
Supply-pump
pressure> bar: 4.80...5.40

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 600
Charge press. hPa: 800
Supply-pump
pressure> bar: 1.80...2.40

Shutoff
electromagnet>Volt: 12

Overlow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.20
quantity> cm3/10s: (26.70...101.20)
2nd speed 1/min: 2100
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700
Charge-air pressure-setting
point> hPa: 450
LDA-stroke mm: 6.1
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.00...53.00
> 1000S.: (50.00...55.00)

3rd speed 1/min: 2450
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 1.00...9.00
> 1000S.: (0.50...9.50)

5th speed 1/min: 2300
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 27.00...33.00
> 1000S.: (26.00...34.00)

9th speed 1/min: 2100
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 48.90...51.90
> 1000S.: (47.40...53.40)

12th speed 1/min: 1500
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 56.50...57.50
> 1000S.: (55.00...59.00)

18th speed 1/min: 600
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.50...46.50
> 1000S.: (43.50...48.50)

20th speed 1/min: 600
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 58.50...61.50

> 1000S.: -

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 13.00...17.00
> 1000S.: (10.00...20.00)
Dispersion cm³/: 3.0
> 1000S.: (3.0)
2nd speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...2.00
> 1000S.: (0.00...2.00)
3rd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 2.50...8.50
> 1000S.: (0.50...10.50)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Charge press. hPa: -
Inj.-qty. cm³/ : -3.0...-5.0 #
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):
1st speed 1/min: 1500
Charge press. hPa: -
Supply pump-
pressure > : -0.1...0.3 #
difference> bar: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...65.00
> 1000S.: (45.00...65.00)

2nd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...57.00
> 1000S.: (37.00...57.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...67.00
> 1000S.: (37.00...67.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.6...6.0
MS mm: 0.6...1.0
SVS max. mm: 2.3
LDA stroke mm: 6.1
XK mm: 17.0...19.0
XL mm: 9.4...12.8

Remarks:

: ...17
: .00(10.00...20.00)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SOF
Edition : 01.07.92
replaces : 18.07.89
Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R318
Type number : 0 460 404 059

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8144.97.2200

Power KW: 83

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40...48
Electronically> : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0.3
> (from BDC): ±0.02(0.04)

Indicator setting
Piston stroke> mm: 1.0
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 600
Charge press. hPa: 800
Setting value mm: 1.10...1.50

Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 600
Charge press hPa: 800
Setting value bar: 3.40...4.00
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1950
Charge press. hPa: 800
Del. quantity cm³/
> 1000S.: 56.00...57.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 42.50...43.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425
Del. quantity cm³/
> 1000S.: 12.50...16.50
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2475
Charge press hPa: 800
Del. quantity cm³/
> 1000S.: 14.00...20.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 55.00...85.00
mind> 1000S.: 55.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 600
Inj.-qty. cm3/
difference> 1000s.: 13.00...19.00#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 600
TD-travel
difference> mm: 0.60...0.80#
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 600
Supply pump
pressure>
difference> bar: 0.10...0.30'
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
Charge press hPa: 800
TD travel mm: 1.10...1.50
> mm: (0.80...1.80)
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press hPa: 800
TD travel mm: 4.20...5.00
> mm: (3.90...5.30)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press hPa: 800
TD travel mm: 8.70...9.50
> mm: (8.40...9.80)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 2300
Charge press hPa: 800
TD travel mm: 10.00...10.80
> mm: (10.00...10.80)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 600
Charge press. hPa: 800
Supply-pump
pressure> bar: 3.40...4.00
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press. hPa: 800

Supply-pump
pressure> bar: 5.20...5.80
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press. hPa: 800
Supply-pump
pressure> bar: 7.20...7.80
Shutoff
electromagnet>Volt: 12

Overlow quantity at overflow valve:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.30
quantity> cm3/10s: (41.70...83.30)
2nd speed 1/min: 2050
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm3/10s: (55.60...139.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 600*
Charge-air pressure-setting
point> hPa: 290
LDA-stroke mm: 5.3
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 53.00...54.00
> 1000s.: (51.00...56.00)
2nd speed 1/min: 2550
Charge press. hPa: 800
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
> 1000s.: -
3rd speed 1/min: 2475
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 14.00...20.00
> 1000s.: (11.00...23.00)
4th speed 1/min: 2350
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 31.00...39.00
> 1000s.: -
5th speed 1/min: 2050
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 54.00...57.00
> 1000s.: (53.30...57.70)

6th speed 1/min: 1950
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 56.00...57.00
> 1000S.: (54.50...58.50)
7th speed 1/min: 1200
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 62.50...65.50
> 1000S.: -
8th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 42.50...43.50
> 1000S.: (40.50...45.50)

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 425
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 12.50...16.50
> 1000S.: (10.50...18.50)
Dispersion cm3/: 3.0
> 1000S.: (3.0)
2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5.50...10.50
> 1000S.: (5.50...10.50)
3rd speed 1/min: 700
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.00...5.00
> 1000S.: (2.00...5.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 600
Inj.-qty. cm3/ : 13.00..19.00#
difference> 1000S.: (13.00...19.00)
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 600
Inj.-qty. cm3/: 11.00..13.00'
difference> 1000S.: (11.00...13.00)
Shutoff
electromagnet Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 600
TD-travel : 0.60...0.80#
difference> mm: (0.60...0.80)
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 600
Supply pump-
pressure > : 0.10...0.30'
difference> bar: (0.10...0.30)
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 50.00...70.00
> 1000S.: (50.00...70.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 55.00...85.00
> 1000S.: (55.00...85.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

KF	mm: 5.6...6.0
MS	mm: 1.6...2.0
XK	mm: 20.0...22.0
XL	mm: 11.8...15.2
Ya	mm: 37.9...39.9
Yb	mm: 41.6...47.2

Remarks: : .50(10.50...18.50)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
 Edition : 02.94
 replaces : 14.02.92
 Calibrating oil : ISO-4113

Injection pump : VE4/10F1600L352
 Type number : 0 460 404 061
 Customer Part-No. :

Customer-specific information
 Customer : VM

Engine : HR 494 HP

Power KW: 53
 Speed 1/min: 1600

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
 return>temp. > °C
 with>thermometer> : 40.00...48.00
 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
 assembly> : 1 688 901 000

Opening
 Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
 x Wall>thickness : 2.00
 x Length> mm: 840

Start of delivery
 Prestroke mm: -
 > (from BDC): -

Injection-pump setting values
 Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
 Setting value mm: 1.90...2.30
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
 Setting value bar: 4.80...5.40
 Shutoff
 electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200
 Del. quantity cm3/
 > 1000S.: 43.50...44.50
 Shutoff
 electromagnet>Volt: 12
 Dispersion cm3/: 3.5
 > 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 400
 Del. quantity cm3/
 > 1000S.: 11.50...15.50
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 3.5
 > 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1650
 Del. quantity cm3/
 > 1000S.: 27.00...33.00
 Shutoff
 electromagnet>Volt: 12

Start:

Speed 1/min: 100
 Del. quantity cm3/: 45.00...85.00
 mind> 1000S.: 45.00
 Shutoff
 electromagnet>Volt: 12

Load-dependent start of delivery:
 Inj.-qty.dif.measurement:

Speed 1/min: 1200
 Inj.-qty. cm3/
 difference> 1000S.: - 10.0...-18.0 #
 Shutoff
 electromagnet>Volt: 12
 TD-travel dif.measurement

1.Speed 1/min: 1200
 TD-travel
 difference> mm: -0.9...-1.1 #
 Shutoff
 electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1600
TD travel mm: 3.60...4.40
> mm: (3.30...4.70)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
TD travel mm: 1.90...2.30
> mm: (1.40...2.80)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 0.70...1.50
> mm: (0.40...1.80)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

2nd speed 1/min: 600
Supply-pump
pressure> bar: 2.40...3.00

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
Supply-pump
pressure> bar: 4.80...5.40

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1600
Supply-pump
pressure> bar: 6.40...7.00

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.20
quantity> cm³/10s: (26.70...101.20)

2nd speed 1/min: 1600
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 1700
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

5th speed 1/min: 1650
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 27.00...33.00
> 1000S.: (24.00...36.00)

8th speed 1/min: 1625
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 33.50...41.50
9th speed 1/min: 1600

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...40.00
> 1000S.: (35.50...41.50)
12th speed 1/min: 1200

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 43.50...44.50
> 1000S.: (41.00...47.00)
20th speed 1/min: 600

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 42.50...45.50
> 1000S.: (41.00...47.00)

Mech. shutoff:

1st speed 1/min: 1600
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: 12

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 11.50...15.50
> 1000S.: (9.50...17.50)

Dispersion cm³/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 550
Shutoff
electromagnet>Volt: 12

Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 2.00...8.00

> 1000S.: (1.00...9.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Inj.-qty. cm³/ : -5.0...-7.0 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1200
Supply pump-
pressure > : -0.1...-0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 50.00...80.00
> 1000S.: (50.00...80.00)

2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...60.00
> 1000S.: (40.00...60.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...85.00
> 1000S.: (45.00...85.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.7...5.9
MS	mm: 0.6...1.0
SVS max.	mm: 1.3
XK	mm: 17.0...19.0
XL	mm: 14.2...17.6

Remarks:

: ...15
: .50(9.50...17.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SOF
Edition : 03.07.92
replaces : 17.07.89
Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R361
Type number : 0 460 404 064
Customer Part-No. :

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8144.97.2280

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40...48
Electronically> : 42...50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0.2
> (from BDC): ±0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 2.80...3.20
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 5.10...5.70
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 62.50...63.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 35.50...36.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425
Del. quantity cm³/
> 1000S.: 9.00...13.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 2.7
> 1000S.: (2.7)

Residual-Delivery Setting

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 3.00...7.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2500
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 21.00...27.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 60.00...90.00
mind> 1000S.: 60.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1000
Charge press hPa: 1000
Inj.-qty. cm3/
difference> 1000s.: 14.50...20.50#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1000
Charge press hPa: 1000
TD-travel
difference> mm: 0.60...0.80#
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1000
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: 0.10...0.30*
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2200
Charge press hPa: 1000
TD travel mm: 8.00...8.80
> mm: (7.70...9.10)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 2.80...3.20
> mm: (2.30...3.70)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 600
Charge press hPa: 1000
TD travel mm: 0.60...1.40
> mm: (0.30...1.70)
Shutoff
electromagnet>Volt: 12
6th speed 1/min: 2000
Charge press. hPa: 1000
TD travel mm: 7.40...8.20
> mm: (7.10...8.50)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 600

Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.10...4.70
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.10...5.70
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.30...7.90
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm3/10s: (41.70...83.40)
2nd speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm3/10s: (55.60...139.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 800
Charge-air pressure-setting
point> hPa: 400
LDA-stroke mm: 4.8
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.50...53.50
> 1000s.: (50.50...55.50)
3rd speed 1/min: 2600
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...7.00
> 1000s.: -
5th speed 1/min: 2500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 21.00...27.00
> 1000s.: (20.00...28.00)
9th speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 53.50...56.50

> 1000S.: (52.80...57.20)
10th speed 1/min: 1950
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 56.50...1.50
> 1000S.: -
11th speed 1/min: 800
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 58.00...61.00
> 1000S.: -
12th speed 1/min: 1200
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 62.50...63.50
> 1000S.: (61.00...65.00)
18th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.50...36.50
> 1000S.: (33.50...38.50)

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 425
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 9.00...13.00
> 1000S.: (8.00...14.00)
2nd speed 1/min: 475
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.00...9.00
> 1000S.: -

Rest delivery:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.00...7.00
> 1000S.: (2.00...8.00)
2nd speed 1/min: 650
Shutoff
electromagnet Volt: 12

Del. quantity cm3/: 1.00...4.00
> 1000S.: -

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

2nd speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm3/: 12.00...14.00*
difference> 1000S.: (12.00...14.00)

Shutoff
electromagnet Volt: 12
4th speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm3/: 14.50...20.50#
difference> 1000S.: (13.50...21.50)

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
TD-travel : 0.60...0.80#
difference> mm: (0.60...0.80)

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply pump-
pressure > : 0.1...0.30*
difference> bar: (0.10...0.30)

Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 42.00...44.00
> 1000S.: (40.50...45.50)

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 65.00...95.00
> 1000S.: (65.00...95.00)

2nd speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 30.00...40.00
> 1000S.: (30.00...40.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 60.00...90.00
> 1000s.: (60.00...90.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

KF mm: 5.6...6.0
MS mm: 1.6...2.0
Ya mm: 33.0...35.0
Yb mm: 49.7...55.3

Ajustement Potentiometer:

Angle for
pot. > °: ->12<-ARF
Supply voltage
pot. > volt: 5.00
Output volt
pot. > volt: 2.41

Remarks:
: ..0.0
: 0 (0.00...0.00)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 F1
Edition : 14.04.92
replaces : 18.02.91
Calibrating oil : ISO-4113
Injection pump : VE4/10F2100L269-1
Type number : 0 460 404 065
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 492.4 HJ

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 1.50...1.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 4.40...5.00
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 66.00...67.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700
Del. quantity cm3/
> 1000S.: 45.00...46.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 450
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 27.00...33.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 47.00...67.00
mind> 1000S.: 47.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: 8.00...14.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1. Speed 1/min: 1500
TD-travel
difference> mm: 0.90...1.10
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 1000
TD travel mm: 7.10...7.90
> mm: (6.80...8.20)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.50...1.90
> mm: (1.00...2.40)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 4.10...4.90
> mm: (3.80...5.20)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.50...8.10
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.40...5.00
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 700
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.60...4.20
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)

2nd speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700*
Charge-air pressure-setting
point> hPa: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 58.50...59.50
> 1000s.: (56.50...61.50)

3rd speed 1/min: 2450
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...8.00
> 1000s.: (0.00...8.00)

5th speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 27.00...33.00
> 1000s.: (26.00...34.00)

9th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 56.50...59.50
> 1000s.: (55.00...61.00)

12th speed 1/min: 1500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 66.00...67.00
> 1000s.: (64.50...68.50)

18th speed 1/min: 700
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...46.00
> 1000s.: (43.00...48.00)

20th speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 67.70...70.70
> 1000s.: (66.20...72.20)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000s.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 13.00...17.00
> 1000S.: (10.00...20.00)
Dispersion cm3/: 3.0
> 1000S.: (3.0)
2nd speed 1/min: 475
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...13.00
> 1000S.: (5.00...15.00)
4th speed 1/min: 550
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.50...5.50
> 1000S.: (0.50...5.50)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm3/ : 3.00...5.00
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Inj.-qty. cm3/: 8.00...14.00
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : 0.90...1.10
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1500
Supply pump-
pressure > : 0.10...0.30
difference> bar: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.00...72.00
> 1000S.: (52.00...72.00)

2nd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...60.00
> 1000S.: (40.00...60.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 47.00...67.00
> 1000S.: (47.00...67.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm: 3,2...3,4
KF	mm: 5,6...6,0
MS	mm: 0,6...1,0
XK	mm: 20,0...22,0
XL	mm: 10,0...13,4

Remarks:

: ...17
: .00(10.00...20.00)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SOF
Edition : 02.08.93
replaces : 07.12.92
Calibrating oil : ISO-4113
Injection pump : VE4/10F2050R364
Type number : 0 460 404 066
Customer Part-No. :

Customer-specific information
Customer : SOFIM

Engine : 8140.67.2580

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: 0.2
> (from BDC): ±0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Setting value mm: 3.10...3.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Setting value bar: 4.50...5.10
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 2000
Del. quantity cm3/
> 1000S.: 41.00...42.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Low-idle speed regulation

Speed 1/min: 375
Del. quantity cm3/
> 1000S.: 15.00...19.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2200
Del. quantity cm3/
> 1000S.: 14.00...20.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 70.00...100.00
mind> 1000S.: 70.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1000
Inj.-qty. cm3/
difference> 1000S.: 18.50...19.50 #
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1000
Supply pump
pressure>
difference> bar: 0.10...0.30#
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1800
 TD travel mm: 7.30...8.10
 > mm: (7.00...8.40)
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1000
 TD travel mm: 3.10...3.50
 > mm: (2.60...4.00)
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 600
 TD travel mm: 0.80...1.60
 > mm: (0.50...1.90)
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 2000
 TD travel mm: 8.20...9.00
 > mm: (7.90...9.30)
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2000
 Supply-pump pressure> bar: 7.00...7.60
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1000
 Supply-pump pressure> bar: 4.50...5.10
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 500
 Supply-pump pressure> bar: 3.50...4.10
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...83.40
 quantity> cm³/10s: (26.70...98.40)
 2nd speed 1/min: 2000
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.00
 quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2330
 Shutoff

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electromagnet Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000s.: (0.00...3.00)
 5th speed 1/min: 2200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 14.00...20.00
 > 1000s.: (13.00...21.00)
 12th speed 1/min: 2000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 41.00...42.00
 > 1000s.: (39.50...43.5)
 15th speed 1/min: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 36.50...39.50
 > 1000s.: (35.50...40.50)
 17th speed 1/min: 600
 Shutoff
 electromagnet>volt: 12
 Del. quantity cm³/: 33.50...36.50
 > 1000H.: (32.50...37.50)
 20th speed 1/min: 500
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 31.50...38.50
 > 1000s.: (31.50...39.00)

Electr. shutoff:

1st speed 1/min: 375
 Del. quantity cm³/: 0.00...3.00
 > 1000s.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 375
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 15.00...19.00
 > 1000s.: (12.00...22.00)
 Dispersion cm³/: 3.0
 > 1000s.: (3.0)
 2nd speed 1/min: 465
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 0.00...2.00
 > 1000s.: (0.00...2.00)
 3rd speed 1/min: 400
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.00...14.00
 > 1000s.: (6.00...16.00)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1000
Inj.-qty. cm3/ : 18.0..24.00 "
difference> 1000S.: (17.0..25.0) "
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Inj.-qty. cm3/ : + 4.0..6.0 '
difference> 1000S.: -
Shutoff
electromagnet Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
1st speed 1/min: 1000
TD-travel : 0.40...0.60 "
difference> mm: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
TD-travel : 0.80...1.80 '

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...60.00
> 1000S.: (40.00...60.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 70.00...100.00
> 1000S.: (70.00...100.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: -
KF	mm: 5.6...6.0
MS	mm: 1.6...2.0
SVS max.	mm: 1.9
Ya	mm: 37.9...39.9
Yb	mm: 40.9...46.5

Remarks:

:
: ...19
: .00(12.00...22.00)3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 M
Edition : 18.02.91
replaces : 07.11.89
Calibrating oil : ISO-4113
Injection pump : VE4/10F1600L379
Type number : 0 460 404 067
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 494 HT

Power KW: 68

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
Charge press. hPa: 1000
Setting value mm: 2.10...2.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Charge press hPa: 1000
Setting value bar: 4,80...5.40
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 61.00...62.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.5
> 1000S.: (4.0)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 52.00...53.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 400
Del. quantity cm3/
> 1000S.: 11.00...15.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.5
> 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1690
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 42.00...48.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 60.00...100.00
mind> 1000S.: 60.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1200
Charge press hPa: 1000
Inj.-qty. cm3/

difference> 1000S.: 19.00...21.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1200
Charge press hPa: 1000
TD-travel
difference> mm: 0.90...1.10
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1200
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: 0.10...0.30
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1600
Charge press hPa: 1000
TD travel mm: 3.90...4.70
> mm: (3.60...5.00)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
Charge press hPa: 1000
TD travel mm: 2.10...2.50
> mm: (1.60...3.00)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.00...1.80
> mm: (0.70...2.10)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

2nd speed 1/min: 750
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.00...3.60
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1200
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.80...5.40
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1600

Charge press. hPa: 1000
Supply-pump
pressure> bar: 6.40...7.00
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)
2nd speed 1/min: 1600
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750*
Charge-air pressure-setting
point> hPa: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 58.00...59.00
> 1000S.: (55.50...61.50)
3rd speed 1/min: 1750
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 1690
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 42.00...48.00
> 1000S.: (39.00...51.00)
9th speed 1/min: 1600
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 53.50...56.50
> 1000S.: (52.00...58.00)
12th speed 1/min: 1200
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 61.10...62.10
> 1000S.: (58.60...64,60)
18th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 52.00...53.00
> 1000S.: (49.50...55.50)

20th speed 1/min: 750
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...63.00
> 1000S.: (58.50...64.50)

Mech. shutoff:

1st speed 1/min: 1600
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: 12

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 11.00...15.00
> 1000S.: (8.50...18.50)
Dispersion cm3/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.00...8.00
> 1000S.: (1.00...9.00)
3rd speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Charge press. hPa: 1000
Inj.-qty. cm3/ : 19.00...21.00
difference> 1000S.: (19.00...21.00)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1200
Charge press. hPa: 1000
Inj.-qty. cm3/: 27.00...35.00
difference> 1000S.: (27.00...35.00)
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press. hPa: 1000
TD-travel : 0.90...1.10
difference> mm: (0.90...1.10)
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1200
Charge press. hPa: 1000
Supply pump-
pressure > : 0.10...0.30
difference> bar: (0.10...0.30)
Shutoff
electromagnet>Volt: 12
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 58.00...88.00
> 1000S.: (58.00...88.00)

2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 49.00...63.00
> 1000S.: (46.00...66.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...100.00
> 1000S.: (60.00...100.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3,2...3,4
KF mm: 5,6...6,0
MS mm: 0,6...1,0
SVS max. mm: 1,3

Remarks:

: ...15
: .00(8.50...18.50) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 08.95
replaces : 03.12.92
Calibrating oil : ISO-4113
Injection pump : VE4/10F2100L414
Type number : 0 460 404 068
Customer Part-No. :

Customer-specific information
Customer : VM

Engine : HR 425 CLI

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 1.40...1.80
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 4.20...4.80
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 65.50...66.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700
Del. quantity cm3/
> 1000S.: 43.00...44.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 450
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 40.00...46.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 45.00...75.00
mind> 1000S.: 45.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Charge press hPa: 1000
Inj.-qty. cm3/
difference> 1000S.: -28.0...-34.0 #

Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement
1.Speed 1/min: 1500
Charge press hPa: 1000
TD-travel
difference> mm: -0.5...-0.7 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 3.40...4.20
> mm: (3.10...4.50)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.40...1.80
> mm: (0.90...2.30)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 700
Charge press hPa: 1000
TD travel mm: 0.20...1.00
> mm: (0.00...1.30)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 2100
Charge press. hPa: 1000
TD travel mm: 6.10...6.90
> mm: (5.80...7.20)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.20...7.80

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.20...4.80

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 700
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.20...3.80
Shutoff

electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)
2nd speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700
Charge-air pressure-setting
point> hPa: 350
LDA-stroke mm: 7.1
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 55.50...56.50
> 1000S.: (53.50...58.50)

3rd speed 1/min: 2550
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...8.00
> 1000S.: (0.00...8.00)

5th speed 1/min: 2300
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...46.00
> 1000S.: (39.00...47.00)

9th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 63.00...66.00
> 1000S.: (61.50...67.50)

12th speed 1/min: 1500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.50...66.50
> 1000S.: (64.00...68.00)

18th speed 1/min: 700
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 43.00...44.00
> 1000S.: (41.00...46.00)

20th speed 1/min: 700
Charge press. hPa: 1000

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.50...68.50
> 1000S.: (64.00...70.00)

Delivery-quant. and breakaway char.:

Inj.-qty.values,temp.-compensated

Del. quantity cm³/: 0.00...8.00
> 1000S.: (0.00...8.00)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 13.00...17.00
> 1000S.: (10.00...20.00)

Dispersion cm³/: 3.0
> 1000S.: (3.0)

2nd speed 1/min: 600
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 0.00...5.00
> 1000S.: (0.00...5.00)

3rd speed 1/min: 500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 2.50...7.50
> 1000S.: (2.00...8.00)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Charge press. hPa: 1000
Inj.-qty. cm³/ : -25.0...-27.0"
difference> 1000S.: -

Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500

Supply pump-

pressure > : -0.1...-0.3 "
difference> bar: -

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 43.00...44.00
> 1000S.: (41.00...46.00)

Automatic starting fuel delivery:

1st speed 1/min: 400
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 45.00...75.00
> 1000S.: (45.00...75.00)

2nd speed 1/min: 550
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 25.00...45.00
> 1000S.: (25.00...45.00)

4th speed 1/min: 100
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 45.00...75.00
> 1000S.: (45.00...75.00)

Shutoff electromagnet:

Cut-in

>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4
KF mm: 5.2...5.6
MS mm: 0.6...1.0
LDA stroke mm: 7.1
XK mm: 38.8...40.8
XL mm: 37.2...46.8

Ajustement Potentiometer:

Supply voltage

pot. > volt: 5.0

Output volt

pot. > volt: 2.31

Remarks:

:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PENTA
Edition : 09.08.95
replaces : 02.94
Calibrating oil : ISO-4113
Injection pump : VE6/12F1950L527
Type number : 0 460 426 218
Customer Part-No. :

Customer-specific information

Customer : PENTA
Engine : KAD / KAMD 42 CE

Power KW: 155

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 110

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0.3
> (from BDC): +0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1500
Setting value mm: 3.30...3.70

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1500
Setting value bar: 7.70...8.30

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1500
Del. quantity cm3/
> 1000s.: 83.50...84.50
Dispersion cm3/: 5.0
> 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000s.: 57.50...58.50

Low-idle speed regulation

Speed 1/min: 325
Del. quantity cm3/
> 1000s.: 21.00...25.00
Del. quantity cm3/: 14.0
> 1000s.: (14.0)

Full-load speed regulation

Speed 1/min: 2050
Charge press hPa: 1500
Del. quantity cm3/
> 1000s.: 57.00...63.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 20.00...70.00
mind> 1000s.: 20.00

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1800
Charge press hPa: 1500
TD travel mm: 4.10...5.10
> mm: (3.70...5.50)
3rd speed 1/min: 1500
Charge press hPa: 1500
TD travel mm: 3.30...3.70
> mm: (2.80...4.20)
4th speed 1/min: 1100
Charge press hPa: 1500
TD travel mm: 1.10...2.10
> mm: (0.70...2.50)

5th speed 1/min: 1900
Charge press. hPa: 1500
TD travel mm: 4.50...5.50
> mm: (4.10...5.90)

Supply-pump pressure characteristic:

1st speed 1/min: 1900
Charge press. hPa: 1500
Supply-pump pressure> bar: 9.00...9.60
2nd speed 1/min: 1500
Charge press. hPa: 1500
Supply-pump pressure> bar: 7.70...8.30
4th speed 1/min: 800
Charge press. hPa: 1500
Supply-pump pressure> bar: 5.20...5.80

Overflow quantity at overflow valve:

1st speed 1/min: 800
Charge press. hPa: 1500
Overflow quantity> cm3/10s: 69.50...152.90
2nd speed 1/min: 1900
Charge press. hPa: 1500
Overflow quantity> cm3/10s: 97.30...180.70
2nd speed 1/min: 1900
Charge press. hPa: 1500
Overflow quantity> cm3/10s: (82.30...195.70)

Delivery-quant. and breakaway char.:

1st speed 1/min: 800
Charge-air pressure-setting point> hPa: 750
LDA-stroke mm: 7.1
Del. quantity cm3/: 85.00...86.00
> 1000S.: (81.50...89.50)
2nd speed 1/min: 2300
Charge press. hPa: 1500
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 2050
Charge press. hPa: 1500
Del. quantity cm3/: 57.00...63.00
> 1000S.: (52.00...68.00)
8th speed 1/min: 2180
Charge press. hPa: 1500
Del. quantity cm3/: 0.00...25.00
> 1000S.: (0.00...25.00)
9th speed 1/min: 1900
Charge press. hPa: 1500
Del. quantity cm3/: 75.50...79.50
> 1000S.: (74.00...81.00)
12th speed 1/min: 1500
Charge press. hPa: 1500
Del. quantity cm3/: 83.50...84.50
> 1000S.: (81.00...87.00)

15th speed 1/min: 1250
Charge press. hPa: 1500
Del. quantity cm3/: 84.50...89.50
> 1000S.: (83.50...90.50)
18th speed 1/min: 600
Charge press. hPa: -
Del. quantity cm3/: 57.50...58.50
> 1000S.: (55.00...61.00)
20th speed 1/min: 800
Charge press. hPa: 1500
Del. quantity cm3/: 94.00...101.0
> 1000S.: (92.50...102.50)

Mech. shutoff:

1st speed 1/min: 1900
Charge press. hPa: 1500
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff electromagnet>volt: -

Electr. shutoff:

1st speed 1/min: 325
Charge press. hPa: -
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff electromagnet>volt: 12.0

Idle delivery:

1st speed 1/min: 325
Del. quantity cm3/: 21.00...25.00
> 1000S.: (18.00...28.00)
2nd speed 1/min: 580
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 275
Del. quantity cm3/: 50.00...100.00
> 1000S.: (50.00...100.00)
2nd speed 1/min: 400
Del. quantity cm3/: 30.00...60.00
> 1000S.: (30.00...60.00)
4th speed 1/min: 100
Del. quantity cm3/: 20.00...70.00
> 1000S.: (20.00...70.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: -
MS	mm: 0.8...1.2
LDA stroke	mm: 7.1
Ya	mm: 37.2...39.2
Yb	mm: 49.1...56.9

Remarks:

: FB = 1,70 MM

:

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Operate control lever after each manifold-pressure compensator pressure change.

Pushing electromagnet.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PENTA
Edition : 09.08.95
replaces : 03.94
Calibrating oil : ISO-4113

Injection pump : VE6/12F1950L528
Type number : 0 460 426 219
Customer Part-No. :

Customer-specific information
Customer : PENTA

Engine : KAD 42

Power KW: 169

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 110

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0.3
> (from BDC): ±0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1500
Setting value mm: 4.10...4.30

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1500
Setting value bar: 8.00...8.60

Full-load del. with charge press.:

Speed 1/min: 1800
Charge press. hPa: 1500
Del. quantity cm³/
> 1000S.: 88.50...89.50
Dispersion cm³/: 5.0
> 1000S.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm³/
> 1000S.: 42.00...43.00

Low-idle speed regulation

Speed 1/min: 325
Del. quantity cm³/
> 1000S.: 7.00...11.00
Del. quantity cm³/: 5.0
> 1000S.: (5.0)

Full-load speed regulation

Speed 1/min: 2180
Charge press hPa: 1500
Del. quantity cm³/
> 1000S.: 9.00...15.00

Start:

Speed 1/min: 100
Del. quantity cm³/: 40.00...90.00
mind> 1000S.: 40.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1900
Charge press hPa: 1500
TD travel mm: 6.20...7.00
> mm: (5.90...7.30)
3rd speed 1/min: 1500
Charge press hPa: 1500
TD travel mm: 4.10...4.30
> mm: (3.50...4.90)
4th speed 1/min: 1100
Charge press hPa: 1500
TD travel mm: 1.00...1.80
> mm: (0.70...2.10)

Supply-pump pressure characteristic:

1st speed 1/min: 1900
Charge press. hPa: 1500
Supply-pump
pressure> bar: 9.10...9.70
2nd speed 1/min: 1500
Charge press. hPa: 1500
Supply-pump
pressure> bar: 8.00...8.60
3rd speed 1/min: 1100
Charge press. hPa: 1500
Supply-pump
pressure> bar: 6.80...7.40

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: 1500
Overflow : 88.90...133.40
quantity> cm³/10s: (73.90...148.40)
2nd speed 1/min: 1950
Charge press. hPa: 1500
Overflow : 97.30...180.70
quantity> cm³/10s: (82.30...195.70)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 800
Charge-air pressure-setting
point> hPa: 750
LDA-stroke mm: 7.5
Del. quantity cm³/: 64.50...65.50
> 1000S.: (61.00...69.00)
2nd speed 1/min: 2300
Charge press. hPa: 1500
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 2180
Charge press. hPa: 1500
Del. quantity cm³/: 9.00...15.00
> 1000S.: -
9th speed 1/min: 1950
Charge press. hPa: 1500
Del. quantity cm³/: 86.00...90.00
> 1000S.: (84.50...91.50)
12th speed 1/min: 1800
Charge press. hPa: 1500
Del. quantity cm³/: 88.50...89.50
> 1000S.: (86.00...92.00)
15th speed 1/min: 1500
Charge press. hPa: 1500
Del. quantity cm³/: 88.50...93.50
> 1000S.: (87.50...94.50)
17th speed 1/min: 1250
Charge press. hPa: 1500
Del. quantity cm³/: 83.50...88.50
> 1000H.: (82.50...89.50)

18th speed 1/min: 600
Charge press. hPa: -
Del. quantity cm³/: 42.00...43.00
> 1000S.: (39.50...45.50)

Mech. shutoff:

1st speed 1/min: 1950
Charge press. hPa: 1500
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Electr. shutoff:

1st speed 1/min: 325
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: 12.0

Idle delivery:

1st speed 1/min: 325
Del. quantity cm³/: 7.00...11.00
> 1000S.: (4.00...14.00)
Dispersion cm³/: 5.0
> 1000S.: (5.0)
2nd speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 275
Del. quantity cm³/: 50.00...100.00
> 1000S.: (50.00...100.00)

2nd speed 1/min: 450
Del. quantity cm³/: 25.00...55.00
> 1000S.: (25.00...55.00)

4th speed 1/min: 100
Del. quantity cm³/: 40.00...90.00
> 1000S.: (40.00...90.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: -
KF mm: KOT
MS mm: 1.6...1.9

LDA stroke mm: 7.5
Ya mm: 37.2...39.2
Yb mm: 55.1...62.9

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Pushing electromagnet.

Operate control lever after each manifold-pressure compensator pressure change.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 06.95
replaces : 03.12.91
Calibrating oil : ISO-4113

Injection pump : VE4/8F2100R357
Type number : 0 460 484 031
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 028.A 1.9L.

Power KW: 45

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery

Indicator setting
Piston stroke> mm: 1.0
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 3.10...3.50
Shutoff
electromagnet>Volt: 12

L23

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 35.50...36.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm3/
> 1000S.: 2.00...3.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm3/
difference> 1000S.: 5.00...11.00
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: 0.30...0.50
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1250

Supply pump
pressure>
difference> bar: 0.50...0.90
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1700
TD travel mm: 5.00...5.80
> mm: (4.70...6.10)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 3.10...3.50
> mm: (2.60...4.00)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
TD travel mm: 1.00...1.80
> mm: (0.70...2.10)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1850
Supply-pump
pressure> bar: 7.10...7.70
> bar: (6.90...7.90)

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Supply-pump
pressure> bar: 5.70...6.30
> bar: (5.50...6.50)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 750
Supply-pump
pressure> bar: 4.50...5.10
> bar: (4.30...5.30)

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.80...98.30)
2nd speed 1/min: 1850

Shutoff
electromagnet>Volt: 12
Overflow : 55.60...138.90
quantity> cm³/10s: (40.70...153.90)

Delivery-quant. and breakaway char.:

3rd speed 1/min: 2650
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000s.: (0.00...6.00)

5th speed 1/min: 2400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 10.00...14.00
> 1000s.: (8.00...16.00)

8th speed 1/min: 2250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 18.00...28.00
> 1000s.: (17.00...29.00)

9th speed 1/min: 1850
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 32.00...34.00
> 1000s.: (30.80...35.20)

10th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 29...34.50
> 1000s.: (27.00...37.00)

12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.50...36.50
> 1000s.: (33.80...38.20)

20th speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 30.50...33.50
> 1000s.: (29.00...35.00)

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm³/: 0.00...3.00
> 1000s.: (0.00...3.00)

Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 425
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 7.00...9.00

> 1000S.: (4.00...12.00)

High Idle:

1st speed 1/mi: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...9.00
> 1000S.: (7.00...12.00)

Rest delivery:

1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.00...3.00
> 1000S.: (0.50...4.50)
2nd speed 1/min: 500
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 2.50...4.50
> 1000S.: (1.00...6.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

3rd speed 1/min: 1250
Inj.-qty. cm3/: 5.00...11.00
difference> 1000S.: (4.00...12.00)
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1250
Inj.-qty. cm3/: 0.00...3.00
difference> 1000S.: (0.00...3.00)
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1250
TD-travel : 0.30...0.50
difference> mm: (0.30...0.50)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD-travel : 0.70...1.10
difference> mm: (0.40...1.40)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Supply pump-
pressure > : 0.50...0.90
difference> bar: (0.30...1.10)
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 35.00...85.00
> 1000S.: (35.00...85.00)

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 18.00...38.00
> 1000S.: (18.00...38.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...85.00
> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.1...5.5
MS	mm: 1.2...1.5
SVS max.	mm: 4.5
XK	mm: 17.0...19.0
XL	mm: 10.6...14.0

Remarks:

:
:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FORD
Edition : 09.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/8F2400R615
Type number : 0 460 484 079
Customer Part-No. :

Customer-specific information
Customer : FORD

Engine : 1.8 IDI

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Start of delivery block
Piston stroke mm: 0.85
> mm: +0.02(0.05)
Outlet > : B

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 6.50...6.90

AFB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 6.40...7.00
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Full-load del. w/out charge press.:

Speed 1/min: 1750
Del. quantity cm3/
> 1000S.: 31.0...31.4

KSB/AFB 11
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 530
Del. quantity cm3/
> 1000S.: 0.20...5.80

KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet Volt: 12.0
Dispersion cm3/: 2.0
> 1000S.: (2.5)

Full-load speed regulation

Speed 1/min: 2625
Del. quantity cm3/
> 1000S.: 9.50...15.50

KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Start:

Speed 1/min: 100
Del. quantity cm3/: 50.00...70.00
mind> 1000S.: 50.00

KSB/AFB
Valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1200
Inj.-qty. cm3/
difference> 1000S.: -5.2...13.2 *
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1200
TD-travel
difference> mm: -1.5...1.7 *
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
TD travel mm: 3.4...3.6
> mm: (2.5...4.5)
KSB/AFB
valve > Volt: -
electromagnet>Volt: 12.0
2nd speed 1/min: 1000
TD travel mm: 2.80...5.20
> mm: (2.70...5.30)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 800
TD travel mm: 2.80...3.60
> mm: (2.40...4.00)
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
4th speed 1/min: 1500
TD travel mm: 6.50...6.90
> mm: (6.00...7.40)
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
5th speed 1/min: 2000
TD travel mm: 8.40...9.20
> mm: (8.00...9.60)
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure> bar: 4.10...4.70
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1500
Supply-pump
pressure> bar: 6.40...7.00
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2000
Supply-pump
pressure> bar: 7.90...8.50
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Overlow quantity at overflow valve:

1st speed 1/min: 750
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Overflow : 41.70...83.40
quantity> cm3/10s: (26.80...97.40)
2nd speed 1/min: 2200
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Overflow : 55.60...152.90
quantity> cm3/10s: (41.60...152.90)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 2950
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.00...2.00
> 1000S.: (0.00...2.00)
2nd speed 1/min: 2625
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet Volt: 12.0
Del. quantity cm3/: 9.50...15.5
> 1000S.: (8.00...17.0)
3rd speed 1/min: 2550
KSB/AFB
valve > Volt: 12.0
Shutoff

electromagnet>Volt: 12.0
Del. quantity cm3/: 15.0...23.0
> 1000S.: (13.0...25.0)
4th speed 1/min: 2400
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 25.1...27.1
> 1000S.: (24.1...28.1)
5th speed 1/min: 1750
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 31.0...31.40
> 1000S.: (29.5...32.90)
6th speed 1/min: 1000
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 28.7...31.7
> 1000S.: (27.9...32.5)
7th speed 1/min: 750
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 28.5...31.5
> 1000S.: (27.7...32.3)

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -
KSB/AFB
valve > Volt: 12.0

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 425
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet Volt: 12.0
Del. quantity cm3/: 6.00...10.0
> 1000S.: (4.00...12.00)

High Idle:

1st speed 1/mi: 570
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 11.0...15.00
> 1000S.: (9.00...17.00)

Rest delivery:

1st speed 1/min: 500
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.20...5.80
> 1000S.: (0.20...5.80)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Inj.-qty. cm3/ : -5.0...7.0 "
difference> 1000S.: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1250
Inj.-qty. cm3/: 2.0...8.0 z'
difference> 1000S.: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1200
TD-travel : -1.7...2.5 '
difference> mm: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

SP press.-dif.measurement:

pompa di mandata (FP):
1st speed 1/min: 1200
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Automatic starting fuel delivery:

1st speed 1/min: 200

KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 50.00...80.00
> 1000S.: LFG/LL VH-VL

2nd speed 1/min: 500
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 24.00...36.00
> 1000S.: LFG/LL VH-VL

3rd speed 1/min: 275
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 50...80 VH/VL
> 1000S.: LFG/ERHÖHTER LL

4th speed 1/min: 100
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 50...70 VH/VL
> 1000S.: LFG ERHÖHTER LL

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: KOT
MS	mm: 2.1...2.3
Ya	mm: 31.6...35.6
Yb	mm: 62.9...71.5

Remarks:

:
:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control

MO1

lever on distributor-head end

Z = Absolute delivery

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FORD
Edition : 09.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/8F2400R622
Type number : 0 460 484 081
Customer Part-No. :

Customer-specific information
Customer : FORD

Engine : 1.8IDI
Power KW: 44

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Start of delivery block
Piston stroke mm: 0.85
> mm: +0.02(0.05)
Outlet > : B

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 5.40...5.80
AFB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 6.50...7.10
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Full-load del. w/out charge press.:

Speed 1/min: 1500
Del. quantity cm3/
> 1000s.: 28.8...29.2
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 2.0
> 1000s.: (3.0)

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Residual-Delivery Setting

Speed 1/min: 500
Del. quantity cm3/
> 1000s.: 2.50...3.5u
KSB/AFB
valve > Volt: -
Shutoff
electromagnet Volt: 12.0

Full-load speed regulation

Speed 1/min: 2550
Del. quantity cm3/
> 1000s.: 17.0...23.0
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Start:

Speed 1/min: 100
Del. quantity cm3/: 50.00...70.00
mind> 1000s.: 50.00
KSB/AFB
Valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1200
Inj.-qty. cm3/
difference> 1000S.: -6.6...10.4 *
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1200
TD-travel
difference> mm: - 0.7...0.9 *
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
TD travel mm: 2.7...2.9
> mm: (1.8...3.8)
KSB/AFB
valve > Volt: 12.0
electromagnet>Volt: 12.0
2nd speed 1/min: 1000
TD travel mm: 3.50...5.90
> mm: (3.40...6.00)
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 800
TD travel mm: 1.6...2.4
> mm: (1.2...2.8)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
4th speed 1/min: 1500
TD travel mm: 5.4...5.8
> mm: (4.9...6.3)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
5th speed 1/min: 2400
TD travel mm: 9.1...9.9
> mm: (8.7...10.3)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure> bar: 4.30...4.90
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1500
Supply-pump
pressure> bar: 6.5...7.1
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2400
Supply-pump
pressure> bar: 9.0...9.60
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Overflow quantity at overflow valve:

1st speed 1/min: 450
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Overflow : 41.70...83.40
quantity> cm3/10s: (27.70...97.40)
2nd speed 1/min: 2400
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Overflow : 55.60...152.90
quantity> cm3/10s: (40.60...167.90)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 2950
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.00...2.00
> 1000S.: (0.00...2.00)
2nd speed 1/min: 2625
KSB/AFB
valve > Volt: -
Shutoff
electromagnet Volt: 12.0
Del. quantity cm3/: 9.50...17.5
> 1000S.: (7.50...19.5)
3rd speed 1/min: 2550
KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12.0
Del. quantity cm3/: 17.0...23.0
> 1000S.: (15.5...24.5)
4th speed 1/min: 2400
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 28.3...30.3
> 1000S.: (27.3...31.3)
5th speed 1/min: 1500
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 28.8...29.2
> 1000S.: (27.3...31.7)
6th speed 1/min: 1000
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 27.8...30.8
> 1000S.: (27.0...31.6)
7th speed 1/min: 750
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 26.9...29.9
> 1000S.: (26.1...30.7)
8th speed 1/min: 450
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 29.5...33.5
> 1000S.: (28.7...34.3)

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Shutoff
electromagnet>volt: -
KSB/AFB
valve > Volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
KSB/AFB
valve > Volt: -

Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 7.00...9.0
> 1000S.: (4.0...12.0)

High Idle:

1st speed 1/mi: 525
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 12.0...14.00
> 1000S.: (9.0...17.0)

Rest delivery:

1st speed 1/min: 500
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 2.5...3.5
> 1000S.: (0.2...5.8)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1200
Inj.-qty. cm3/ : -8.4...10.4 "
difference> 1000S.: -
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1200
Inj.-qty. cm3/: 2.0...8.0 Z'
difference> 1000S.: -

KSB/AFB
valve > Volt: -
Shutoff
electromagnet Volt: 12.0
3rd speed 1/min: 1200
Charge press. hPa: ALFB
Inj.-qty. cm3/: 2.0...8.0 Z*
difference> 1000S.: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1200
TD-travel : -0.6...1.4 '
difference> mm: -
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

2nd speed 1/min: 1200
Charge press. hPa: ALFB
TD-travel : 0.0...0.6 Z*
difference> mm: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1200
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1250
Charge press. hPa: ARF1
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 19.5...20.5
> 1000S.: (27.5...22.5)
2nd speed 1/min: 600
Charge press. hPa: ARF2
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 9.5...10.5
> 1000S.: (7.5...12.5)

Automatic starting fuel delivery:

1st speed 1/min: 500
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 24.00...36.00
> 1000S.: LFG/LL VH-VL

2nd speed 1/min: 200
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 50.0...70.0

> 1000S.: LFG/LL VH-VL

3rd speed 1/min: 275
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 50...70 VH-VL
> 1000S.: LFG/ERHÖHTER LL

4th speed 1/min: 500
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 26...38 VH-VL
> 1000S.: LFG/ERHÖHTER LL

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: KOT
MS mm: 1.6...1.9
Ya mm: 29.4...33.4
Yb mm: 63.5...72.5

Ajustement Potentiometer:

Angle for
pot. > °: 25.0
Supply voltage
pot. > volt: 5.0

Remarks:

: ARF1= 3.55 VOLT
: ARF2 = 1.85 VOLT

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 09.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/8F2200R574-1
Type number : 0 460 484 101
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1.9 L SD

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Start of delivery block
Piston stroke mm: 0.9
> mm: ±0.02(0.06)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 5.10...5.50

Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.40...6.00
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm³/
> 1000S.: 33.0...34.0
Shutoff
electromagnet>Volt: 12.0
Dispersion cm³/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 520
Del. quantity cm³/
> 1000S.: 6.00...8.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525
Del. quantity cm³/
> 1000S.: 8.50...12.50
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 40.00...66.00
mind> 1000S.: 40.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 750
TD travel mm: 3.10...3.90
> mm: (2.80...4.20)
electromagnet>Volt: 12.0
2nd speed 1/min: 1250
TD travel mm: 5.10...5.50
> mm: (4.60...6.00)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
TD travel mm: 7.5...8.3

> mm: (7.2...8.6)
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
 Supply-pump pressure> bar: 4.00...4.60
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1250
 Supply-pump pressure> bar: 5.40...6.00
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 2000
 Supply-pump pressure> bar: 7.30...7.90
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm³/10s: (27.80...97.30)
 2nd speed 1/min: 2200
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm³/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2675
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 3rd speed 1/min: 2525
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 8.50...12.5
 > 1000S.: (6.50...14.5)
 4th speed 1/min: 2400
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 22.0...32.0
 > 1000S.: (21.0...33.0)
 5th speed 1/min: 2200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 34.0...35.00
 > 1000S.: (31.8...37.20)
 6th speed 1/min: 1250
 Shutoff

electromagnet>Volt: 12.0
 Del. quantity cm³/: 33.0...34.0
 > 1000S.: (31.3...35.7)
 7th speed 1/min: 750
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 32.5...35.5
 > 1000S.: (31.0...37.0)
 8th speed 1/min: 400
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 34.5...40.5
 > 1000S.: (32.0...43.0)

Electr. shutoff:

1st speed 1/min: 450
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm³/: 8.50...10.5
 > 1000S.: (5.50...13.50)

High Idle:

1st speed 1/mi: 525
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.50...10.50
 > 1000S.: (5.50...13.50)

Rest delivery:

1st speed 1/min: 525
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 6.00...8.00
 > 1000S.: (3.0...11.0)

Automatic starting fuel delivery:

1st speed 1/min: 180
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 40.00...74.00
 > 1000S.: (40.00...74.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...66.00
> 1000S.: (40.00...66.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.7
MS	mm: 1.1...1.5
Ya	mm: 36.0...40.0
Yb	mm: 47.7...57.3

Remarks:

⋮

Ya = Distance between VE flange and
speed-control lever in idle
position

Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position

Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 08.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE5/8F2100L545-2
Type number : 0 460 485 029
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4 L SDT4/SG

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 2.20...2.60
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 36.0...37.0
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540
Del. quantity cm3/
> 1000S.: 6.50...7.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -3.50...9.50 *
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.3...0.5 *
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790
TD travel mm: 5.00...5.80
> mm: (4.70...6.10)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 2.20...2.60
> mm: (1.70...3.10)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 0.70...1.50
> mm: (0.40...1.80)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1000
Supply-pump
pressure> bar: 5.0...5.6
> bar: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1250
Supply-pump
pressure> bar: 5.70...6.30
> bar: -
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1790
Supply-pump
pressure> bar: 7.20...7.80
> bar: -
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (27.80...97.30)
2nd speed 1/min: 2100
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...152.90
quantity> cm³/10s: (40.60...167.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2600
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: (0.00...6.00)
5th speed 1/min: 2400
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 10.00...14.00
> 1000S.: (8.00...16.00)
8th speed 1/min: 2300
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...27.00
> 1000S.: (26.00...28.00)
9th speed 1/min: 2100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 30.00...32.00
> 1000S.: (28.80...33.20)
12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.00...37.00
> 1000S.: (34.3...38.7)
20th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 32.30...35.30
> 1000S.: (30.80...36.80)

Electr. shutoff:

1st speed 1/min: 415
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 415
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 7.00...9.00
> 1000S.: (4.00...12.00)

Rest delivery:

1st speed 1/min: 540
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.50...7.50
> 1000S.: (5.00...9.00)
2nd speed 1/min: 490
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 6.80...8.80
> 1000S.: (5.30...10.30)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm3/ : -6.0...8.0 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1500
Inj.-qty. cm3/: 0.0...3.0 z'
Shutoff
electromagnet Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : -1.2...1.6 '
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1500
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1500
Supply pump-
pressure > : -0.8...1.2 '
difference> bar: -
Shutoff
electromagnet>Volt: 12.0

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...85.00
> 1000S.: -

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 17.00...37.00
> 1000S.: (17.00...37.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...85.00
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

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Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4
KF mm: 5.8
MS mm: 1.2...1.6
Ya mm: 32.8...34.8
Yb mm: 60.5...71.5

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 09.04.92
replaces : 01.85
Calibrating oil : ISO 4113

Injection pump : VE4/9F2150L31-1
Type number : 0 460 494 133

Customer-specific information
Customer : MOTORI VM

Engine : HR 488 HT

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 688 901 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1900
Charge press. hPa: 800
Setting value mm: 6,40...6,80
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1900
Charge press hPa: 800

Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12.0

Full-load del. with charge press.:

Speed 1/min: 1600
Charge press. hPa: 800
Del. quantity cm³/
> 1000S.: 46.50...47.50
Shutoff
electromagnet>Volt: 12.0
Dispersion cm³/: 3,0
> 1000S.: -

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm³/
> 1000S.: 31.50...32.50
Shutoff
electromagnet>Volt: 12.0

Low-idle speed regulation

Speed 1/min: 400
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 3.0
> 1000S.: -

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 800
Del. quantity cm³/
> 1000S.: 27.50...33.50
Shutoff
electromagnet>Volt: 12.0

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: -
mind> 1000S.: 44.0
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
Charge press hPa: 800
TD travel mm: 1.30...2.10

> mm: (1.00...2.40)
electromagnet>Volt: 12.0
2nd speed 1/min: 1900
Charge press hPa: 800
TD travel mm: 6.40...6.80
> mm: (5.90...7.30)
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2150
Charge press hPa: 800
TD travel mm: 7.50...8.30
> mm: (7.20...8.60)
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 400
Charge press. hPa: 800
Supply-pump
pressure> bar: 2.00...2.60
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1900
Charge press. hPa: 800
Supply-pump
pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2150
Charge press. hPa: 800
Supply-pump
pressure> bar: 6.30...6.90
Shutoff
electromagnet>Volt: 12.0

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12.0
Overflow : 42.00...83.00
quantity> cm³/10s: (27.00...98.00)
2nd speed 1/min: 2150
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12.0
Overflow : 55.00...138.00
quantity> cm³/10s: (40.00...153.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 600
Charge-air pressure-setting
point> hPa: 270
LDA-stroke mm: 3.8
Shutoff
electromagnet>Volt: 12.0

Del. quantity cm³/: 39.30...41.30
> 1000S.: (37.60...42.00)
2nd speed 1/min: 2600
Charge press. hPa: 800
Shutoff
electromagnet Volt: 12.0
Del. quantity cm³/: 0.0...2.0
> 1000S.: -
3rd speed 1/min: 2450
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 0.0...10.0
> 1000S.: -
4th speed 1/min: 2300
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 27.50...33.50
> 1000S.: (26.50...34.50)
5th speed 1/min: 2150
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 40.00...43.00
> 1000S.: (39.2...43.80)
6th speed 1/min: 1600
Charge press. hPa: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 46.50...47.50
> 1000S.: (44.70...49.30)
7th speed 1/min: 600
Charge press. hPa: 270
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 39.30...41.30
> 1000S.: (37.60...42.00)
8th speed 1/min: 600
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 31.50...32.50
> 1000S.: (29.80...34.20)

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 8.00...12.0
> 1000S.: (6.00...14.00)
Dispersion cm³/: 3.0
> 1000S.: -
2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 0.0...6.00

> 1000s.: -
3rd speed 1/min: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.0....2.0
> 1000s.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 44.00...
> 1000s.: -

2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 0.0...43.0
> 1000s.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.3
KF	mm: 5.7...5.9
MS	mm: 0.7...0.9
SVS max.	mm: 5.6
LDA stroke	mm: 3.8
XK	mm: 20.2...22.2
XL	mm: 8.7...12.1

Remarks: : 0 (6.00...14.00) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA
Edition : 06.95
replaces : 04.92
Calibrating oil : ISO 4113

Injection pump : VE4/9F2150L31-1
Type number : 0 460 494 133

Customer-specific information
Customer : MOTORI VM

Engine : HR 488 HT

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1900
Charge press. hPa: 800
Setting value mm: 6,40...6,80
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1900

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Charge press hPa: 800
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12.0

Full-load del. with charge press.:

Speed 1/min: 1600
Charge press. hPa: 800
Del. quantity cm3/
> 1000S.: 46.50...47.50
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 3,0
> 1000S.: -

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 31.50...32.50
Shutoff
electromagnet>Volt: 12.0

Low-idle speed regulation

Speed 1/min: 400
Charge press hPa: -
Del. quantity cm3/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 3.0
> 1000S.: -

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 800
Del. quantity cm3/
> 1000S.: 27.50...33.50
Shutoff
electromagnet>Volt: 12.0

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm3/: -
mind> 1000S.: 44.0
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
Charge press hPa: 800

TD travel mm: 1.30...2.10
 > mm: (1.00...2.40)
 electromagnet>Volt: 12.0
 2nd speed 1/min: 1900
 Charge press hPa: 800
 TD travel mm: 6.40...6,80
 > mm: (5.90...7.30)
 Shutoff
 electromagnet>Volt: 12.0
 3rd speed 1/min: 2150
 Charge press hPa: 800
 TD travel mm: 7.50...8.30
 > mm: (7.20...8.60)
 Shutoff
 electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 400
 Charge press. hPa: 800
 Supply-pump
 pressure> bar: 2.00...2.60
 Shutoff
 electromagnet>Volt: 12.0
 2nd speed 1/min: 1900
 Charge press. hPa: 800
 Supply-pump
 pressure> bar: 5.70...6.30
 Shutoff
 electromagnet>Volt: 12.0
 3rd speed 1/min: 2150
 Charge press. hPa: 800
 Supply-pump
 pressure> bar: 6.30...6.90
 Shutoff
 electromagnet>Volt: 12.0

Overflow quantity at overflow valve:

1st speed 1/min: 600
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12.0
 Overflow : 42.00...83.00
 quantity> cm³/10s: (27.00...98.00)
 2nd speed 1/min: 2150
 Charge press. hPa: 800
 Shutoff
 electromagnet>Volt: 12.0
 Overflow : 55.00...138.00
 quantity> cm³/10s: (40.00...153.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 600
 Charge-air pressure-setting
 point> hPa: 270
 LDA-stroke mm: 3.8
 Shutoff

electromagnet>Volt: 12.0
 Del. quantity cm³/: 39.30...41.30
 > 1000s.: (37.60...42.00)
 2nd speed 1/min: 2600
 Charge press. hPa: 800
 Shutoff
 electromagnet Volt: 12.0
 Del. quantity cm³/: 0.0...2.0
 > 1000s.: -
 3rd speed 1/min: 2450
 Charge press. hPa: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 0.0...10.0
 > 1000s.: -
 4th speed 1/min: 2300
 Charge press. hPa: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 27.50...33.50
 > 1000s.: (26.50...34.50)
 5th speed 1/min: 2150
 Charge press. hPa: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 40.00...43.00
 > 1000s.: (39.2...43.80)
 6th speed 1/min: 160
 Charge press. hPa: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 46.50...47.50
 > 1000s.: (44.70...49.30)
 7th speed 1/min: 600
 Charge press. hPa: 270
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 39.30...41.30
 > 1000s.: (37.60...42.00)
 8th speed 1/min: 600
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 31.50...32.50
 > 1000s.: (29.80...34.20)

Idle delivery:

1st speed 1/min: 400
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm³/: 8.00...12.0
 > 1000s.: (6.00...14.00)
 Dispersion cm³/: 3.0
 > 1000s.: -
 2nd speed 1/min: 500
 Shutoff
 electromagnet>Volt: 12.0

Del. quantity cm³/: 0.0...6.00
> 1000s.: -
3rd speed 1/min: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 0.0....2.0
> 1000s.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 44.00...
> 1000s.: -

2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 0.0...43.0
> 1000s.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.3
KF	mm: 5.7...5.9
MS	mm: 0.7...0.9
SVS max.	mm: 5.6
LDA stroke	mm: 3.8
XK	mm: 20.2...22.2
XL	mm: 8.7...12.1

Remarks:

: 0 (6.00...14.00) 3.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEU
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R513
Type number : 0 460 494 341
Customer Part-No. :

Customer-specific information
Customer : PSA

Engine : XUD 9 TF-Y

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Indicator setting
Piston stroke> mm: 0.3
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Charge press. hPa: 1000
Setting value mm: 3.40...3.80

Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 1000
Setting value bar: 5.30...5.90
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 1000
Del. quantity cm3/
> 1000s.: 53.50...54.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm3/
> 1000s.: 36.50...37.50
Shutoff
electromagnet>Volt: 12

Residual-Delivery Setting

Speed 1/min: 490
Del. quantity cm3/
> 1000s.: 8.00...9.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2575
Charge press hPa: 1000
Del. quantity cm3/
> 1000s.: 12.00...16.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 150
Del. quantity cm3/: 37.00...67.00
mind> 1000s.: 37.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm3/

difference> 1000S.: -11.0...15.0 *
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -0.9...1.1 *
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
Charge press hPa: 1000
TD travel mm: 6.10...6.90
> mm: (5.80...7.20)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 3.40...3.80
> mm: (2.90...4.30)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
Charge press hPa: 1000
TD travel mm: 1.10...1.90
> mm: (0.80...2.20)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.00...4.60
> bar: -

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.30...5.90
> bar: -

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.20...7.80
> bar: -

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.10
quantity> cm³/10s: (26.70...101.10)
2nd speed 1/min: 2150
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750
Charge-air pressure-setting
point> hPa: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.50...46.50
> 1000S.: (43.00...49.00)

2nd speed 1/min: 2750
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: (0.00...6.00)
5th speed 1/min: 2575
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 12.00...16.00
> 1000S.: (10.00...18.00)
8th speed 1/min: 2375
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 34.00...44.00
> 1000S.: (33.00...45.00)
9th speed 1/min: 2150
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 49.10...51.10
> 1000S.: (47.90...52.30)
10th speed 1/min: 2000
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 51.00...53.00
> 1000S.: (49.80...54.20)
12th speed 1/min: 1250
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 53.50...54.50
> 1000S.: (51.8...56.2)

18th speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.50...37.50
> 1000S.: (34.00...40.00)
20th speed 1/min: 500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.80...49.80
> 1000S.: (45.30...51.30)

Electr. shutoff:

1st speed 1/min: 440
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 440
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 15.00...17.00
> 1000S.: (12.00...20.00)

High Idle:

1st speed 1/mi: 490
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 15.00...17.00
> 1000S.: (12.00...20.00)

Rest delivery:

1st speed 1/min: 490
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.00...9.00
> 1000S.: (6.50...10.50)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm³/ : 2.0...11.0 Z"
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : -1.40...3.0 "
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 25.00...45.00
> 1000S.: (25.00...45.00)

3rd speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 50.00...56.00
> 1000S.: (45.50...60.50)

4th speed 1/min: 150
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...67.00
> 1000S.: (37.00...67.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: KOT
MS mm: 1.1...1.5
Ya mm: 28.8...32.8
Yb mm: 69.2...80.8

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control

lever on drive end

Y_b = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Z = Absolute delivery



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN
Edition : 08.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/9F2050R452-2
Type number : 0 460 494 351
Customer Part-No. :

Customer-specific information
Customer : RENAULT

Engine : J8S-758

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1125
Setting value mm: 2.60...3.00
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure

Speed 1/min: 1125
Setting value bar: 4.20...4.80
Shutoff
electromagnet>Volt: 12.0

Full-load del. w/out charge press.:

Speed 1/min: 1125
Del. quantity cm3/
> 1000s.: 35.2...36.2
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 2.5
> 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 500
Del. quantity cm3/
> 1000s.: 2.00...6.00
Shutoff
electromagnet Volt: 12.0

Full-load speed regulation

Speed 1/min: 2200
Del. quantity cm3/
> 1000s.: 17...23.00
Shutoff
electromagnet>Volt: 12.0

Start:

Speed 1/min: 100
Del. quantity cm3/: 52.00...92.00
mind> 1000s.: 52.00
Shutoff
electromagnet>Volt: 12.0

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1125
Inj.-qty. cm3/
difference> 1000s.: -11.0...15.0 *
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1125
TD-travel
difference> mm: - 0.5...0.7 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 0.7...1.5
> mm: (0.4...1.8)
electromagnet>Volt: 12.0
2nd speed 1/min: 1125
TD travel mm: 2.6...3.0
> mm: (2.1...3.5)
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2000
TD travel mm: 7.10...7.90
> mm: (6.80...8.20)
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 800
Supply-pump
pressure> bar: 3.10...3.70
> bar: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1125
Supply-pump
pressure> bar: 4.20...4.80
> bar: -
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 2000
Supply-pump
pressure> bar: 6.30...7.10
> bar: -
Shutoff
electromagnet>Volt: 12.0

Overlow quantity at overflow valve:

1st speed 1/min: 800
Shutoff
electromagnet>Volt: 12.0
Overflow : 41.00...83.30
quantity> cm³/10s: (26.00...98.30)
2nd speed 1/min: 2200
Shutoff
electromagnet>Volt: 12.0
Overflow : 55.30...138.70
quantity> cm³/10s: (40.30...153.70)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 2450
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 0.0...5.0
> 1000S.: -
2nd speed 1/min: 2350
Shutoff
electromagnet Volt: 12.0

Del. quantity cm³/: 2.50...10.5
> 1000S.: (1.5...11.5)
3rd speed 1/min: 2200
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 17.0...23.0
> 1000S.: (16.0...24.0)
4th speed 1/min: 2000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 33.8...35.8
> 1000S.: (32.5...37.1)
5th speed 1/min: 1750
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 33.90...35.90
> 1000S.: (32.60...37.20)
6th speed 1/min: 1125
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 35.2...36.2
> 1000S.: (33.4...38.0)
7th speed 1/min: 800
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 32.7...35.7
> 1000S.: (32 2...36.5)

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm³/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet Volt: 12.0
Del. quantity cm³/: 6.00...10.00
> 1000S.: (4.00...12.00)

High Idle:

1st speed 1/mi: 500
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 8.5...12.5
> 1000S.: (6.5...14.5)

Rest delivery:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 2.00...6.00
> 1000S.: -

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1125
Charge press. hPa: -
Inj.-qty. cm³/ : -10.0..12.0 "
difference> 1000S.: -

Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1125
Charge press. hPa: -
Inj.-qty. cm³/: 2.0...8.0 Z'
difference> 1000S.: -
Shutoff
electromagnet Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1125
TD-travel : - 1.0...1.6 '
difference> mm: -
Shutoff
electromagnet>Volt: 12.0

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1125
Supply pump-
pressure > : - 0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12.0

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 23.5...24.5
> 1000S.: (21.5...26.5)

Automatic starting fuel delivery:

1st speed 1/min: 310
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 25.00...45.00
> 1000S.: -

2nd speed 1/min: 210
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 45.00...85.00
> 1000S.: -

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 52.0...92.0
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.3...5.7
MS mm: 1.1...1.3
Ya mm: 37.8...41.8
Yb mm: 41.9...52.1

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Z = Absolute delivery

On initial measurement, screw in
residual-quantity adjusting screw 1 mm.

Screw out residual-quantity adjusting
screw 1 mm after setting pump.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : NIS
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R577
Type number : 0 460 494 354
Customer Part-No. :

Customer-specific information
Customer : NISSAN-MISA

Engine : GX-3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
Setting value mm: 3.00...3.40
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Setting value bar: 5.60...6.20
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 2150
Del. quantity cm³/
> 1000S.: 44.00...45.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 6.5...10.5
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 2.5
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2500
Del. quantity cm³/
> 1000S.: 12.00...18.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 45.00...75.00
mind> 1000S.: 45.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 2150
TD travel mm: 8.8...9.6
> mm: (8.5...9.9)
electromagnet>Volt: 12.0
2nd speed 1/min: 1200
TD travel mm: 3.00...3.40
> mm: (2.50...3.90)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 900
TD travel mm: 0.80...1.60
> mm: (0.50...1.90)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2150

Supply-pump
 pressure> bar: 8.20...8.80
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1200
 Supply-pump
 pressure> bar: 5.60...6.20
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 900
 Supply-pump
 pressure> bar: 4.70...5.30
 > bar: -
 Shutoff
 electromagnet>Volt: 12

Overlow quantity at overflow valve:

1st speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...86.10
 quantity> cm3/10s: (26.70...101.10)
 2nd speed 1/min: 2150
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.00
 quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2700
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 0.0...5.0
 > 1000S.: -
 2nd speed 1/min: 2500
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 12.0...18.0
 > 1000S.: (10.5...19.5)
 3rd speed 1/min: 2350
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 29.3...37.3
 > 1000S.: (27.8...38.8)
 4th speed 1/min: 2150
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 44.0...45.0
 > 1000S.: (43.2...45.8)
 5th speed 1/min: 1800
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 42.60...45.60
 > 1000S.: (41.60...46.60)
 6th speed 1/min: 1200

Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 41.3...44.3
 > 1000S.: (40.3...45.3)
 7th speed 1/min: 900
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 40.5...43.5
 > 1000S.: (39.5...44.5)
 8th speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 39.5...42.5
 > 1000S.: (38.5...43.5)

Electr. shutoff:

1st speed 1/min: 350
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 350
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 6.5...10.50
 > 1000S.: (4.50...12.5)
 2nd speed 1/min: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 0.00...5.00
 > 1000S.: -
 3rd speed 1/min: 500
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: -
 4th speed 1/min: 250
 Shutoff
 electromagnet Volt: 12.0
 Del. quantity cm3/: 27.0...33.0
 > 1000S.: (25.0...35.0)

High Idle:

1st speed 1/mi: 500
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 7.5...10.5
 > 1000S.: TLA 4.7 MM

Automatic starting fuel delivery:

1st speed 1/min: 270
 Shutoff

electromagnet>Volt: 12.0
Del. quantity cm³/: 50.0...
> 1000S.: -

2nd speed 1/min: 400
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 00.0...50.0
> 1000S.: -

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 45.0...75.0
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.2...5.6
MS	mm: 1.1...1.3
TLA-A	mm: 4.7
XK	mm: KSB-HEBEL
XL	mm: 4.3 MM
Ya	mm: 35.1...39.1
Yb	mm: 59.9...71.1

Ajustement Potentiometer:

Angle for
pot. > °: 25
Supply voltage
pot. > volt: 5.0
Output volt
pot. > volt: 0.8

Remarks:

⋮
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : NIS
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/9F2250R577-1
Type number : 0 460 494 355
Customer Part-No. :

Customer-specific information
Customer : NISSAN-MISA

Engine : GX-3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200
Setting value mm: 3.00...3.40
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Setting value bar: 5.60...6.20
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 2150
Del. quantity cm3/
> 1000S.: 44.00...45.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.5
> 1000S.: (3.5)

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm3/
> 1000S.: 6.5...10.5
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 2.5
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2500
Del. quantity cm3/
> 1000S.: 12.00...18.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 45.00...75.00
mind> 1000S.: 45.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 2150
TD travel mm: 8.8...9.6
> mm: (8.5...9.9)
electromagnet>Volt: 12.0
2nd speed 1/min: 1200
TD travel mm: 3.00...3.40
> mm: (2.50...3.90)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 900
TD travel mm: 0.80...1.60
> mm: (0.50...1.90)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2150

Supply-pump
 pressure> bar: 8.20...8.80
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1200
 Supply-pump
 pressure> bar: 5.60...6.20
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 900
 Supply-pump
 pressure> bar: 4.70...5.30
 > bar: -
 Shutoff
 electromagnet>Volt: 12

 Overlow quantity at overflow valve:

 1st speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...86.10
 quantity> cm3/10s: (26.70...101.10)
 2nd speed 1/min: 2150
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.00
 quantity> cm3/10s: (40.60...154.00)

 Delivery-quant. and breakaway char.:

 1st speed 1/min: 2700
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 0.0...5.0
 > 1000S.: -
 2nd speed 1/min: 2500
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 12.0...18.0
 > 1000S.: (10.5...19.5)
 3rd speed 1/min: 2350
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 29.3...37.3
 > 1000S.: (27.8...38.8)
 4th speed 1/min: 2150
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 44.0...45.0
 > 1000S.: (43.2...45.8)
 5th speed 1/min: 1800
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 42.60...45.60
 > 1000S.: (41.60...46.60)
 6th speed 1/min: 1200

Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 41.3...44.3
 > 1000S.: (40.3...45.3)
 7th speed 1/min: 900
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 40.5...43.5
 > 1000S.: (39.5...44.5)
 8th speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 39.5...42.5
 > 1000S.: (38.5...43.5)

Electr. shutoff:

1st speed 1/min: 350
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 350
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 6.5...10.50
 > 1000S.: (4.50...12.5)
 2nd speed 1/min: 800
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 0.00...5.00
 > 1000S.: -
 3rd speed 1/min: 500
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: -
 4th speed 1/min: 250
 Shutoff
 electromagnet Volt: 12.0
 Del. quantity cm3/: 27.0...33.0
 > 1000S.: (25.0...35.0)

High Idle:

1st speed 1/mi: 500
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 7.5...10.5
 > 1000S.: TLA 4.7 MM

Automatic starting fuel delivery:

1st speed 1/min: 270
 Shutoff

electromagnet>Volt: 12.0
Del. quantity cm³/: 50.0...
> 1000s.: -

2nd speed 1/min: 400
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 00.0...50.0
> 1000s.: -

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 45.0...75.0
> 1000s.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.2...5.6
MS	mm: 1.1...1.3
TLA-A	mm: 4.7
XK	mm: KSB-HEBEL
XL	mm: 4.3 MM
Ya	mm: 35.1...39.1
Yb	mm: 59.9...71.1

Ajustement Potentiometer:

Angle for
pot. > °: 25
Supply voltage
pot. > volt: 5.0
Output volt
pot. > volt: 0.8

Remarks:

:
:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/9F2100R471-1
Type number : 0 460 494 356
Customer Part-No. :

Customer-specific information
Customer : VW 1.9 L

Engine : UD T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 3.70...4.10
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.30...5.90
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 39.50...40.50
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.5
> 1000S.: (3.5)

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm3/
> 1000S.: 5.0...6.0
Shutoff
electromagnet Volt: 12.0
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 240.
Del. quantity cm3/
> 1000S.: 13.00...17.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 40.00...90.00
mind> 1000S.: 40.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm3/
difference> 1000S.: - 7.0...13.0 *
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: - 0.9...1.1 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1250
 TD travel mm: 3.7...4.1
 > mm: (3.1...4.7)
 electromagnet>Volt: 12.0
 2nd speed 1/min: 1700
 TD travel mm: 5.60...6.40
 > mm: (5.20...6.80)
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 750
 TD travel mm: 1.10...1.90
 > mm: (0.70...2.30)
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1250
 Supply-pump pressure> bar: 5.30...5.90
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1700
 Supply-pump pressure> bar: 6.60...7.20
 > bar: -
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 750
 Supply-pump pressure> bar: 3.80...4.40
 > bar: -
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm3/10s: 41.70...86.10
 > cm3/10s: (26.70...101.10)
 2nd speed 1/min: 1850
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm3/10s: 55.60...139.00
 > cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1650
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 0.0...3.0
 > 1000S.: -
 2nd speed 1/min: 2400

Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 13.0...17.0
 > 1000S.: (11.0...19.0)
 3rd speed 1/min: 2250
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 24.0...34.0
 > 1000S.: (23.0...35.0)
 4th speed 1/min: 1850
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 40.0...42.0
 > 1000S.: (38.8...43.2)
 5th speed 1/min: 1250
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 39.50...40.50
 > 1000S.: (37.80...42.20)
 6th speed 1/min: 750
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 37.0...40.0
 > 1000S.: (35.5...41.5)
 7th speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 36.0...42.0
 > 1000S.: (33.5...44.5)

Electr. shutoff:

1st speed 1/min: 425
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 425
 Shutoff
 electromagnet Volt: 12.0
 Del. quantity cm3/: 5.5...7.5
 > 1000S.: (2.5...10.5)

High Idle:

1st speed 1/mi: 500
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 5.5...7.5
 > 1000S.: (2.5...10.5)

Rest delivery:

1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 5.0...6.0
> 1000S.: (3.5...7.5)
2nd speed 1/min: 515
Shutoff
electromagnet Volt: 12.0
Del. quantity cm³/: 5.5...7.5
> 1000S.: (4.0...9.0)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm³/ : 0.0...3.0 Z "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : - 1.3...1.7 "
difference> mm: - (0.9...2.1)
Shutoff
electromagnet>Volt: 12.0

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : - 0.7...1.1 "
difference> bar: - (0.5...1.3)
Shutoff
electromagnet>Volt: 12.0

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 21.0...23.0 *
> 1000S.: (19.0...25.0)

Automatic starting fuel delivery:

1st speed 1/min: 380
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 25.0...45.0
> 1000S.: -

2nd speed 1/min: 180
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 40.0...90.0
> 1000S.: -

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 40.0...90.0
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.1...5.5
MS mm: 1.2...1.4
XK mm: MIKROSCH.
XL mm: 0.8...3.0 *
Ya mm: 20.0...22.0
Yb mm: 61...72.5

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN
Edition : 07.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2400R581
Type number : 0 460 494 357
Customer Part-No. :

Customer-specific information
Customer : RENAULT

Engine : G8T - 752

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 2.30...2.70
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.90...6.50
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm³/
> 1000S.: 36.9...37.9
Shutoff
electromagnet>Volt: 12.0
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 450
Del. quantity cm³/
> 1000S.: 3.00...7.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600
Del. quantity cm³/
> 1000S.: 20...26.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 45.00...75.00
mind> 1000S.: 45.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm³/
difference> 1000S.: -7.40...11.40 *
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -0.7...0.9 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
TD travel mm: 6.00...6.80
> mm: (5.80...7.00)

KSB/AFB valve > Volt: -

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 2.30...2.70
> mm: (2.00...3.00)

KSB/AFB valve > Volt: -

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 0.60...1.40
> mm: (0.40...1.60)

KSB/AFB valve > Volt: -

Shutoff
electromagnet>Volt: 12
9th speed 1/min: 750
TD travel mm: 0.00...2.20
> mm: (0.20...2.20)

KSB/AFB valve > Volt: 12.0

Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump pressure> bar: 4.40...5.00
> bar: -

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Supply-pump pressure> bar: 5.90...6.50
> bar: -

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Supply-pump pressure> bar: 7.90...8.50
> bar: -

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm³/10s: 41.70...86.10
(26.70...101.10)
2nd speed 1/min: 2300
Shutoff
electromagnet>Volt: 12

Overflow quantity> cm³/10s: 55.60...139.00
(40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2800
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...5.00
> 1000s.: (0.00...5.00)

5th speed 1/min: 2600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 20.00...26.00
> 1000s.: (19.00...27.00)

8th speed 1/min: 2500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.50...39.50
> 1000s.: (30.50...40.50)

9th speed 1/min: 2300
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...42.00
> 1000s.: (38.70...43.70)

10th speed 1/min: 2000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 39.30...41.30
> 1000s.: (38.00...42.60)

12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.90...37.90
> 1000s.: (35.1...39.7)

15th speed 1/min: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.20...39.20
> 1000s.: (35.40...40.00)

20th speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...38.00
> 1000s.: (34.20...38.80)

Electr. shutoff:

1st speed 1/min: 385
Del. quantity cm³/: 0.00...3.00
> 1000s.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 385
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 12.0...16.0
> 1000S.: (10.0...18.0)

High Idle:

1st speed 1/mi: 435
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 10.0...14.0
> 1000S.: (8.00...16.00)

Rest delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.00...7.00
> 1000S.: (1.00...9.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm3/ : -6.1...8.1 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Inj.-qty. cm3/: 2.0...8.0 Z'
difference> 1000S.: -
Shutoff
electromagnet Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : -1.0...1.4 '
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)

gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 22.50...23.50
> 1000S.: (20.50...25.50)

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.00...95.00
> 1000S.: (45.00...95.00)

2nd speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 15.00...45.00
> 1000S.: (15.00...45.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.00...75.00
> 1000S.: (45.00...75.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: 4.7...4.9
MS mm: 0.7...0.9
Ya mm: 37.2...41.2
Yb mm: 61.3...69.7

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN
Edition : 07.08.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/9F2400R581-1
Type number : 0 460 494 358
Customer Part-No. :

Customer-specific information
Customer : RENAULT

Engine : G8T - 752

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 2.30...2.70
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.90...6.50
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 36.9...37.9
Shutoff
electromagnet>Volt: 12.0
Dispersion cm3/: 2.5
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 450
Del. quantity cm3/
> 1000S.: 3.00...7.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600
Del. quantity cm3/
> 1000S.: 20...26.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 45.00...75.00
mind> 1000S.: 45.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm3/
difference> 1000S.: -7.40...11.40 *
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -0.7...0.9 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
TD travel mm: 6.00...6.80
> mm: (5.80...7.00)

KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 2.30...2.70
> mm: (2.00...3.00)

KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12
4th speed 1/min: 1000
TD travel mm: 0.60...1.40
> mm: (0.40...1.60)

KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12
9th speed 1/min: 750
TD travel mm: 0.00...2.20
> mm: (0.20...2.20)

KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure> bar: 4.40...5.00
> bar: -

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250

Supply-pump
pressure> bar: 5.90...6.50
> bar: -

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000

Supply-pump
pressure> bar: 7.90...8.50
> bar: -

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.10
quantity> cm³/10s: (26.70...101.10)

2nd speed 1/min: 2300
Shutoff
electromagnet>Volt: 12

Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2800
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...5.00
> 1000S.: (0.00...5.00)

5th speed 1/min: 2600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 20.00...26.00
> 1000S.: (19.00...27.00)

8th speed 1/min: 2500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.50...39.50
> 1000S.: (30.50...40.50)

9th speed 1/min: 2300
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...42.00
> 1000S.: (38.70...43.70)

10th speed 1/min: 2000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 39.30...41.30
> 1000S.: (38.00...42.60)

12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.90...37.90
> 1000S.: (35.1...39.7)

15th speed 1/min: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.20...39.20
> 1000S.: (35.40...40.00)

20th speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...38.00
> 1000S.: (34.20...38.80)

Electr. shutoff:

1st speed 1/min: 385
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 385
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 12.0...16.0
> 1000S.: (10.0...18.0)

High Idle:

1st speed 1/mi: 435
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 10.0...14.0
> 1000S.: (8.00...16.00)

Rest delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.00...7.00
> 1000S.: (1.00...9.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm³/ : -6.1...8.1 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Inj.-qty. cm³/: 2.0...8.0 Z'
difference> 1000S.: -
Shutoff
electromagnet Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : -1.0...1.4 '
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)

gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 22.50...23.50
> 1000S.: (20.50...25.50)

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...95.00
> 1000S.: (45.00...95.00)

2nd speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 15.00...45.00
> 1000S.: (15.00...45.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...75.00
> 1000S.: (45.00...75.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: 4.7...4.9
MS mm: 0.7...0.9
Ya mm: 37.2...41.2
Yb mm: 61.3...69.7

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R593
Type number : 0 460 494 359
Customer Part-No. :

Customer-specific information
Customer : RENAULT

Engine : G8T-760 CA

Power KW: 81

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Indicator setting
Piston stroke> mm: 0,74
Outlet> : C

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Charge press. hPa: 1000
Setting value mm: 2.60...3.00
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 1000
Setting value bar: 5.10...5.70
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 58.20...59.20
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 42.5...43.5
Shutoff
electromagnet>Volt: 12.0

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 19.5...23.5
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 2.5
> 1000S.: (2.5)

Residual-Delivery Setting

Speed 1/min: 450
Del. quantity cm³/
> 1000S.: 5.00...9.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2450
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 27.0...33.0
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 47.50...52.50
mind> 1000s.: 47.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Charge press hPa: -
Inj.-qty. cm³/
difference> 1000s.: - 9.0...13.0 *
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1250
Charge press hPa: -
TD-travel
difference> mm: - 0.6...0.8 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
Charge press hPa: 1000
TD travel mm: 1.50...3.90
> mm: -
KSB/AFB
valve > Volt: 12.0
electromagnet>Volt: 12.0
2nd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.50...2.30
> mm: (1.30...2.50)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 2.60...3.00
> mm: (2.30...3.30)
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12.0
4th speed 1/min: 2150
Charge press hPa: 1000
TD travel mm: 5.50...6.30
> mm: (5.30...6.50)
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.30...3.90
> bar: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.10...5.70
> bar: -
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2150
Charge press. hPa: 1000
Supply-pump
pressure> bar: 6.90...7.50
> bar: -
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Overflow : 50.00...94.40
quantity> cm³/10s: (35.00...109.4)
2nd speed 1/min: 2150
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Overflow : 77.70...161.10
quantity> cm³/10s: (62.70...176.10)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750
Charge-air pressure-setting
point> hPa: 300
LDA-stroke mm: 7.3
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 49.5...50.5
> 1000s.: (47.7...52.3)
2nd speed 1/min: 2600
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12.0
Del. quantity cm³/: 0.00...5.00
> 1000s.: (0.00...5.00)
3rd speed 1/min: 2550
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12.0
 Del. quantity cm3/: 6.5...14.5
 > 1000S.: (5.50...15.50)
 4th speed 1/min: 2450
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 27.0...33.0
 > 1000S.: (26.0...34.0)
 5th speed 1/min: 2150
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 55.70...58.70
 > 1000S.: (54.40...59.00)
 6th speed 1/min: 1250
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 58.2...59.2
 > 1000S.: (56.4...61.0)
 7th speed 1/min: 1000
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 58.1...61.1
 > 1000S.: (57.3...61.9)
 8th speed 1/min: 500
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 55.70...58.70
 > 1000S.: (54.90...59.50)
 9th speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 42.50...43.50
 > 1000S.: (40.70...45.30)

Electr. shutoff:

1st speed 1/min: 350
 Charge press. hPa: -
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -
 Timing valve Volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 350
 Timing valve Volt: -

Shutoff
 electromagnet Volt: 12.0
 Del. quantity cm3/: 19.5...23.5
 > 1000S.: (17.5...25.5)

High Idle:

1st speed 1/mi: 400
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 17.5...21.5
 > 1000S.: (15.5...23.5)

Rest delivery:

1st speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12.0
 Del. quantity cm3/: 5.0...9.0
 > 1000S.: -

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
 Charge press. hPa: -
 Inj.-qty. cm3/ : - 7.5...9.5 "
 difference> 1000S.: -
 Shutoff
 electromagnet>Volt: 12.0
 2nd speed 1/min: 1250
 Charge press. hPa: -
 Inj.-qty. cm3/: 2.0...8.0 4'
 difference> 1000S.: -
 3rd speed 1/min: 1250
 Charge press. hPa: ALFB
 Inj.-qty. cm3/: 2.0...8.0 Z**
 difference> 1000S.: -
 KSB/AFB
 valve > Volt: 12.0
 Shutoff
 electromagnet>Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1250
 Charge press. hPa: -
 TD-travel : -0.3...0.9 '
 difference> mm: -
 Shutoff
 electromagnet>Volt: 12.0
 2nd speed 1/min: 1250
 Charge press. hPa: ALFB
 TD-travel : 0.0...0.6 **
 difference> mm: -
 KSB/AFB
 valve > Volt: 12.0
 Shutoff
 electromagnet>Volt: 12.0

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Charge press. hPa: -
Supply pump-
pressure > : - 0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12.0

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 50.00...70.00
> 1000s.: -

2nd speed 1/min: 300
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 30.00...50.00
> 1000s.: -

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 47.50...52.50
> 1000s.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.6...3.8
KF	mm: 6.00
MS	mm: 0.7...1.1
LDA stroke	mm: 7.3
Ya	mm: 37.2...41.2
Yb	mm: 61.3...69.7

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control

Lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

Permissible port/port scatter with
stop test, mechanical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN
Edition : 04.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R593-1
Type number : 0 460 494 360
Customer Part-No. :

Customer-specific information
Customer : RENAULT

Engine : G8T-760 CA

Power KW: 81

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Indicator setting
Piston stroke> mm: 0,74
Outlet> : C

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

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Charge press. hPa: 1000
Setting value mm: 2.60...3.00
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 1000
Setting value bar: 5.10...5.70
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 58.20...59.20
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.0
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 42.5...43.5
Shutoff
electromagnet>Volt: 12.0

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 19.5...23.5
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 2.5
> 1000S.: (2.5)

Residual-Delivery Setting

Speed 1/min: 450
Del. quantity cm³/
> 1000S.: 5.00...9.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2450
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 27.0...33.0
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 47.50...52.50
mind> 1000S.: 47.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Charge press hPa: -
Inj.-qty. cm³/
difference> 1000S.: - 9.0...13.0 *
Shutoff
electromagnet>Volt: 12.0
TD-travel dif.measurement

1.Speed 1/min: 1250
Charge press hPa: -
TD-travel
difference> mm: - 0.6...0.8 *
Shutoff
electromagnet>Volt: 12.0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
Charge press hPa: 1000
TD travel mm: 1.50...3.90
> mm: -
KSB/AFB
valve > Volt: 12.0
electromagnet>Volt: 12.0
2nd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.50...2.30
> mm: (1.30...2.50)
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12.0
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 2.60...3.00
> mm: (2.30...3.30)
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12.0
4th speed 1/min: 2150
Charge press hPa: 1000
TD travel mm: 5.50...6.30
> mm: (5.30...6.50)
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12.0

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.30...3.90
> bar: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.10...5.70
> bar: -
Timing valve Volt: -
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2150
Charge press. hPa: 1000
Supply-pump
pressure> bar: 6.90...7.50
> bar: -
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Overflow : 50.00...94.40
quantity> cm³/10s: (35.00...109.4)
2nd speed 1/min: 2150
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Overflow : 77.70...161.10
quantity> cm³/10s: (62.70...176.10)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 750
Charge-air pressure-setting
point> hPa: 300
LDA-stroke mm: 7.3
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 49.5...50.5
> 1000S.: (47.7...52.3)
2nd speed 1/min: 2600
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12.0
Del. quantity cm³/: 0.00...5.00
> 1000S.: (0.00...5.00)
3rd speed 1/min: 2550
Charge press. hPa: 1000
Shutoff

electromagnet>Volt: 12.0
Del. quantity cm3/: 6.5...14.5
> 1000S.: (5.50...15.50)
4th speed 1/min: 2450
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 27.0...33.0
> 1000S.: (26.0...34.0)
5th speed 1/min: 2150
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 55.70...58.70
> 1000S.: (54.40...59.00)
6th speed 1/min: 1250
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 58.2...59.2
> 1000S.: (56.4...61.0)
7th speed 1/min: 1000
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 58.1...61.1
> 1000S.: (57.3...61.9)
8th speed 1/min: 500
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 55.70...58.70
> 1000S.: (54.90...59.50)
9th speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 42.50...43.50
> 1000S.: (40.70...45.30)

Electr. shutoff:

1st speed 1/min: 350
Charge press. hPa: -
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -
Timing valve Volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 350
Timing valve Volt: -

Shutoff
electromagnet Volt: 12.0
Del. quantity cm3/: 19.5...23.5
> 1000S.: (17.5...25.5)

High Idle:

1st speed 1/mi: 400
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 17.5...21.5
> 1000S.: (15.5...23.5)

Rest delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 5.0...9.0
> 1000S.: -

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Charge press. hPa: -
Inj.-qty. cm3/ : - 7.5...9.5 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1250
Charge press. hPa: -
Inj.-qty. cm3/: 2.0...8.0 Δ'
difference> 1000S.: -
3rd speed 1/min: 1250
Charge press. hPa: ALFB
Inj.-qty. cm3/: 2.0...8.0 Z**
difference> 1000S.: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250
Charge press. hPa: -
TD-travel : -0.3...0.9 '
difference> mm: -
Shutoff
electromagnet>Volt: 12.0
2nd speed 1/min: 1250
Charge press. hPa: ALFB
TD-travel : 0.0...0.6 **
difference> mm: -
KSB/AFB
valve > Volt: 12.0
Shutoff
electromagnet>Volt: 12.0

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Charge press. hPa: -
Supply pump-
pressure > : - 0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12.0

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 50.00...70.00
> 1000s.: -

2nd speed 1/min: 300
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 30.00...50.00
> 1000s.: -

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm³/: 47.50...52.50
> 1000s.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.6...3.8
KF	mm: 6.00
MS	mm: 0.7...1.1
LDA stroke	mm: 7.3
Ya	mm: 37.2...41.2
Yb	mm: 61.3...69.7

Remarks:

:
:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control

Lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

Permissible port/port scatter with
stop test, mechanical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 07.08.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2300R594
Type number : 0 460 494 365
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1,9 l UD B4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Indicator setting
Piston stroke> mm: 0.8
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Charge press. hPa: 750
Setting value mm: 4.30...4.50

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Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 750
Setting value bar: 5.40...6.00
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 750
Del. quantity cm³/
> 1000S.: 50.00...51.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 450
Del. quantity cm³/
> 1000S.: 37.7...43.2
Shutoff
electromagnet>Volt: 12.0

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 7.00...8.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600
Charge press hPa: 750
Del. quantity cm³/
> 1000S.: 9.00...13.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 32.5...47.5
mind> 1000S.: 32.5
Shutoff
electromagnet>Volt: 12.0

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm³/

difference> 1000S.: -7.0...11.0 *
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -1.9...2.1 *
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 750
TD travel mm: 8.00...8.60
> mm: (7.50...9.10)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 750
TD travel mm: 4.30...4.50
> mm: (3.60...5.20)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
Charge press hPa: 750
TD travel mm: 1.50...2.10
> mm: (1.00...2.60)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
Charge press. hPa: 750
Supply-pump
pressure> bar: 4.30...4.90
> bar: -

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 750
Supply-pump
pressure> bar: 5.40...6.00
> bar: -

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2100
Charge press. hPa: 750
Supply-pump
pressure> bar: 7.40...8.00
> bar: -

Shutoff
electromagnet>Volt: 12

Overlow quantity at overflow valve:

1st speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.10
quantity> cm3/10s: (26.70...101.10)
2nd speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...152.90
quantity> cm3/10s: (40.60...167.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2750
Charge press. hPa: 750
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

5th speed 1/min: 2600
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 9.0...13.00
> 1000S.: (7.00...15.00)

8th speed 1/min: 2400
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 32.50...42.50
> 1000S.: (31.50...43.50)

9th speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 42.00...44.00
> 1000S.: (40.80...45.20)

12th speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 50.00...51.00
> 1000S.: (48.3...52.7)

21th speed 1/min: 450
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.20...43.20
> 1000S.: (34.70...45.70)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm3/: 0.00...3.00

> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -
Idle delivery:
Damper set qty.:
1st speed 1/min: 1000
Shutoff
electromagnet>Volt: 12.0
Del. quantity cm3/: 17.0...19.0
> 1000S.: (14.0...22.0)
LFG-setting:
Idle delivery:
1st speed 1/min: 450
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 16.00...18.00
> 1000S.: (13.00...21.00)
High Idle:
1st speed 1/mi: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 16.00...18.00
> 1000S.: (13.00...21.00)
Rest delivery:
1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...8.00
> 1000S.: (5.50...9.50)
Load-dependent start of delivery:
Inj.-qty.dif.measurement:
1st speed 1/min: 1250
Charge press. hPa: -
Inj.-qty. cm3/ : -4.5...6.5 "
difference> 1000S.: -
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: -
Inj.-qty. cm3/: 0.0...3.0 Z'
difference> 1000S.: -
Shutoff
electromagnet Volt: 12.0
TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1250

Charge press. hPa: -
TD-travel : -2.5...2.9 '
difference> mm: -
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1250
Charge press. hPa: -
Supply pump-
pressure > : -0.1...0.3 "
difference> bar: -
Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34...36.00
> 1000S.: (32.00...38.00)

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
> 1000S.: (35.00...55.00)

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 31.00...51.00
> 1000S.: (31.00...51.00)

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...43.00
> 1000S.: (32.50...47.50)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8

KF	mm: KOT
MS	mm: 1.0...1.4
XK	mm: MIKROSCH.
XL	mm: A=0.8...3.0
Ya	mm: 37.6...41.6
Yb	mm: 49.9...62.8

Remarks:

:

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end